THE

British Mariner's

ASSISTANT:

CONTAINING

FORTY TABLES,

Adapted to the feveral Purposes of Trigonometry and Navigation.

To which are prefixed,

AN ESSAY ON LOGARITHMS,

AND

NAVIGATION EPITOMIZED:

PROBLEMS, with the Method of finding the La-TITUDE at Sea, by Observations taken either before or after Noon, &c. &c.

By BENJAMIN DONA. K

Master of the ACADEMY at KINGSTON, near TAUNTON, SOMERSETSHIEE, and Author of the Mathematical Essays, The Accountant, The Geometrician, &c.

LONDON:

Printed for B. LAW, in Ave-Maria-Lane, M.DCC.LXXIV.

To the Kight regourables to

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Section of General

To the Right Honourable the EARL of SANDWICH,

First Lord of the Admiralty and Commissioner of Longitude;

And to the other Lords of the Admiralty and Commissioners of Longitude.

My Lords and Gentlemen,

B

other Tables, published by your Order, have certainly been of great Use in finding the Longitude at Sea, &c. But there seemed to be wanting a Collection of the most useful Tables, for the common and daily Use of Navigators. Such an one I have attempted, and now present to the Public, with a sincere Desire of its being serviceable; and, if it meets with your Approbation, I shall esteem it as the greatest Honour.

I am, my Lords and Gentlemen,

Your most obedient Servant,

B. DONN.

ON MONDAY, the 17th of JANUARY, 1774, is intended to be opened, An ACADEMY, at KINGSTON, near TAUNTON, in the County of SOMERSET; in which young Gentlemen may be genteely boarded, and taught (by the Author and able Masters) Writing, Arithmetick, Bookkeeping, Navigation, and Geography; also English, grammatically; Latin, Greek, French, &c. - Drawing, Dancing, Music, &c. - Algebra, Annuities, Architecture, Astronomy, Chances, Conic Sections, Circulating Decimals, Dialling, Fluxions, Mechanics, including Hydrefixies, Hydraulics, and Pneumatics; Mensuration, Optics, Perspective, Ship-building, Surveying, Trigonometry, Plane and Spherical, &c. with the Uses of mathematical and philosophical Instruments ; - Ex-

perimental Philosophy, on a proper Apparatus, &c.

Boarding, including Education in Writing, common Arithmetick, and English Grammar, 14 Guineas per Annum; Entrance One Guinea and a Half. The other Branches must be paid for, agreeably to the printed Terms, which may be had at the ACADEMY.

Stage Coaches from London, Briftel, Bath, and Exeter, come into Taunten every Week. — King from is about 3 Miles. North of Taunten, in a healthy Situation.

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ear ing. Tis well-known to the British Mariners, that the necessary Tables, for the Practice of Trigonometry and Navigation, are at present scattered about in a Variety of Books; so that, hitherto, the young Student, if he would obtain but an indifferent Set of Tables, has been obliged to buy, and frequently turn over, at least four different Treatises. Hence it seems probable, that even a bare Collection of the most valuable Tables, in one Volume, at a moderate Price, would be acceptable to the Public.—However, I hope this Book will be found to have some little Merit above a mere Collection.

Having, for some Years, had an Intention to publish, for the Ease of Teachers in general, and my own in particular, an Epitome of the Art, containing the Elements, with their Application to Practice, in a Manner which, it is supposed, will equally serve the Purpose of the Master and Pupil, I came to a Resolution to print the necessary Tables in a Volume by themselves, to render them more convenient; and at the same Time not to give a mere Copy, but to examine and make such Improvements, in the several Tables, as seemed proper, as well as to add, such other Tables as might be judged necessary. I shall only mention a few Instances.

First, in Demy-Octavo Books, it has been outtomary, for Want of Room, to give, at most, only 6 Places of Decimals, in the Tables of Logarithms; whereas we have contrived to give it, in this, to 7 Places of Decimals. Also to the same Number in Table II. of Artificial Sines, Tangents, &c. By which Means the Calculations can be worked with the same Accuracy as by Sherwin's or the Quarto Tables. I have also contrived to give, in this Table, without increasing its Bulk, the Natural Sines; which are now of great Use in Navigation, in Conjunction with Table IV. for finding the Latitude, by two Altitudes, at any Time of the Day.

Tables VII. and VIII. of Difference of Latitude and Departure, are given, in Books of this Size, only to the Distance, 100; but, in this Collection, are given even in a more convenient Form than in the Quarto Books, generally used at Sea; where the Distance is 300 Miles. I have adapted these, to find readily the Difference of Latitude and Departure, &c. corresponding to a Distance of 3000 Miles, or upwards.

The Table of Meridional Parts is adapted both to

the Sphere and Spheroid.

The Tables of Right-Ascension and Equation of Time, Sun's Place, Declination, &c. are contrived to as to serve the common Purposes of Navigation, for several Years to come.

In the Table of Latitudes and Longitudes, many are given on better Authority than in the common

Sea-Books.

I might proceed to take Notice of several other Things of this Nature, but should rather leave it to the ingenious and candid Mariner, to make the Comparison himself, between this and any other Book of Tables he has been accustomed to, both with Respect to the Number of Tables, and their Accuracy and Form. I shall therefore only farther remark, on this Subject, that Table XL. is constructed from upwards of 300 Observations, many of which were made by myself, and the Rest by my Assistant, for that Purpose, at Bristol; and, at that Port,

PREFACE.

Port, the Time of High-Water, computed by this Table, did not, at a Mean, for a whole Year, err a Quarter of an Hour from the Truth; when, by the common Rule, there would be frequently between 2 and 3 Hours Error. Briftel is not so well adapted for making such Observations as many other Places are; however, I am not without Hopes that this Table will be found to answer much better than the common Methods, at other Ports also; But then the Flowing at the Port must be previously ascertained, to a few Minutes, and the Clock, or Watch, fet by a good Sun-Dial,

or aftronomical Observation.

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The Tables of Logarithms being of the greatest Use in almost every Branch of the Mathematics, I was unwilling to refer the Reader to another Book. for the Rules, &c. necessary to be understood, for properly using them; and have therefore reprinted. and prefixed to this Volume, A Compendious Effay on the Doctrine of Logarithms; by which, it is hoped, the Learner may attain as clear Ideas of the Nature and Application of Logarithms, as he could The Investigation of by much larger Treatifes. Logarithms, by Infinite Series, &c. is omitted, because it depends on the higher Parts of the Mathematics, and would therefore be improper in this Volume; but if Leisure will permit, and Encouragement be given, to go on with my Courle of mathematical Literature, the Subject will be treated of in a more proper Place.

Though it is impossible to find Room, in this Volume, to treat fully of the several Uses of the Tables herein contained, yet, to render it as independent as may be, to prevent the young Navigator having continual Recourse to other Books, I have given Compendiums of Trigonometry, Plane and Spherical; Navigation Epitomized; A Short Introduction to the Use of the Tables; and A Com-

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ESSAY

ONTHE

NATURE, INVESTIGATION, and APPLICATION,

OF

LOGARITHMS.

By BENJAMIN DONN.

THE SECOND EDITION.

Si numeris in ratione geometrica progredientibus subscribantur totidem alii æquidisferentes, dicuntur bi illorum Logarithmi.

Wolfii Elem. Arith.



CHARACTERS used in this ESSAY.

Therefore.

The Sign of Addition, named Plus; as 2+3 fignifies +

that 2 and 3 are to be added together.

The Sign of Subtraction, called Minus; as 3-1 denotes that I is to be subtracted from 3.

The Sign of Multiplication; as 3 × 2 shews that 3 is to × be multiplied by 2.

The Sign of Division; as 6:3 fignifies that 6 is to be This is sometimes written like a divided by 3. Fraction, thus, 5.

The Sign of Equality; as 4+1=5 denotes that 4 ad-

ded to I is equal to 5.

1+m Signifies that the Number denoted by mis-to be added to 1, and the Sum squared; 1+m|3 that 1+m is to be raised to the third Power, or cubed, &c.

Square-Root, as $\sqrt{4} = 2$ denotes that the Square-Root of 4 is equal to 2.

Proportionality is thus expressed; as 2:4::6:12 :: denotes that as 2 is to 4, so is 6 to 12; and the like of any other Proportion.

Besides these, the following are used in Trigonometry and Navigation, and therefore may perhaps be used in this Volume.

Parallel. 11

Angle. Rt. L, Right-Angle.

Triangle. Perpendicular.

S. Sine. S. C. Sine-Complement. C. S. Cofine.

Tangent. T. C. Tangent-Complement. C. T. Co-tangent.

Sec. Secant.

V.S. Versed Sine.

R. Radius.



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ON

Logarithmical Arithmetick.

CHAP. I.

Of DEFINITIONS, and the Nature and Investigation of LOGARITHMS.

1. I OGARITHMS (λόγος and άριθμὸς) are Numbers for contrived and adapted to other Numbers, that, by their Addition or Subtraction, the Product or Quotient of the Numbers to which they are adapted, may be found.

This Definition expresses the principal Design and Use of those artificial Numbers, which Mathematicians distinguish by the Name of Logarithms. But here, (as it frequently happens in other Sciences,) a clear, accurate, etymological Sense cannot be understood, till we have made a particular Enquiry into the Principles of the Science itself.

2. To proceed, then, let us confider the Nature of a geometrical Progression, with the Indices set over the respective Terms.

For Example: Indices, o. 1. 2. 3. 4. 5. 6. &c. Terms, 1. 2. 4. 8. 16. 32. 64. &c.

Here it is evident, that, if we add any two Indices together, their Sum will be the Index of that Number which is equal to

the Product of the Numbers whose Indices are added together; Thus, e. g. the Indices z and 3, added together, are = 5; the Numbers answering to the Indices z and 3, are 4 and 8; and 4 × 8 = 32 = the Number answering to the Index 5.

It also follows, from the Nature of such Progressions, that, if we subtract one Index from another, their Difference will be the Index of that Number, or Term, which is equal to the Quotient of the two Numbers, or Terms, corresponding to the Indices whose Differences we found: e.g. the Indices 6—4=2; the Numbers corresponding to these Indices are 64 and 16, and 64: 16=4 = the Number corresponding to the Index 2.

3. Hence it follows, that (by Art. 1.) the Indices of a Series of Numbers in geometrical Progression, are Logarithms of

the Terms in that Progression.

4. Hence, by the Nature of geometrical Progressions, it follows, that, if the Logarithm of any Number be multiplied by the Index of the Power, the Product will be equal to the Logarithm of the Root when involved to the Height denoted by the Index. Thus, for Instance: The Index or Logarithm of 4, in the above Series, viz. 2, being multiplied by 3, is = 6 = the Index or Logarithm of 64; and 64 = 4 cubed $= 4 \times 4 \times 4$.

of any Number being divided by 2, the Quotient will be the Index or Logarithm of the Square-Root; but if divided by 3, the Index or Logarithm of the Cube-Root; if divided by 4, the Quotient will be the Index or Logarithm of the Cube-Root; if divided by 4, the Quotient will be the Index or Logarithm of the 4th Power, &c.

Example. The Logarithm of 64, in the above Series, is 6; which being divided by 3, the Quotient is 2, the Index or Logarithm of 4, which is the Cube-Root of 64; for $4 \times 4 \times 4$

= 6;.

6. It follows, from the Nature of geometrical Progressions, that the Ratio of the first, and any other Term, is composed of so many equal Ratios as are expressed by the Index of that other Term: e.g. in the above Series, the Ratio of the 1st and 7th Term is made up of 6 equal Ratios; for the Ratio of the 1st to the 2d Term is as 1 to 2, and of the 2d to the 3d as 1 to 2, and of the 3d to the 4th as 1 to 2, and of the 4th to the 5th as 1 to 2, and of the 5th to the 7th as 1 to 2; the Ratio of the 1st to the 7th is composed of 1×1×1×1×1×1 to 2×2×2×2×2; i. e. as 1 to 64. Hence plainly appears the Propriety of the Term, Logarithms, it signifying, according to its Etymology, a Number of Ratios.

7. Logarithms may be of various Kinds; for, instead of the Series, 1, 2, 4, &c. above, we may substitute any other; thus, e. g. if we write the geometrical Series, 1, 10, 100, &c.

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Indices or Logarithms, o. 1. 2. 3. 4. &c.
Terms or Natural Numbers, 1. 10. 100. 1000. 10000. &c.
This is the Form of Brigs's Logarithms; which are those we hall now make it our Business to discourse on.

The greatest Difficulty now remaining is to explain the Mehod made Use of by Mr. Brigs, for finding the Logarithms of he intermediate Terms; because the Natural Numbers, 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, &c. are not in a geometrical Progression.

8. Before we proceed any farther, it may be proper to observe, hat, if we suppose a geometrical Series beginning from Unity, whose common Multiplier is 1 + m, the Series will be 1, 1 + m,

 $|+m|^2$, $|1+m|^3$, $|1+m|^4$, &c. Now, if m be supposed inlefinitely little, it is evident that some of the Terms will apground indefinitely near to the Natural Numbers, 2, 3, 4, 5, %c. and, consequently, it is possible to find the Natural Number answering to any Logarithm, very nearly, though not excelly, true.

Ctly, true.

9. The Method of doing which may be thus explained.

9. The Method of Logarithms, if x and y represent any two lumbers, the Logarithm of $x \times y =$ the Logarithm of x + the logarithm of y; and therefore, (by Art. 5.) the Logarithm of

 $\sqrt{x \times y} = \frac{\text{the Log. } x + \text{Log. } y}{2}$: Hence, the * arithmetical

dean of any two Logarithms is equal to the Logarithm of the cometrical Mean of the two Natural Numbers; consequently, he Logarithm of any intermediate Number may be found, by and the geometrical Mean between the two given Numbers, whose Logarithms are given,) and the Logarithm answering hereto, (viz. the arithmetical Mean of the two given Logathms;) then the geometrical Mean between the geometrical lean just found and the nearest Extreme, and the Logarithm asswering thereto. After this Manner we proceed, till we find geometrical Mean so very nearly equal to the Number whose ogarithm we want, as we shall think sufficiently near the ruth; then the Logarithm of that geometrical Mean is sufficiently near the Logarithm required.

10. To illustrate this, let it be required to find the Logathm of 9. Here we have the Logarithms of 1 and 10 given.

^{*} Half the Sum of any two Numbers is called an arithmetical Mean; and the pare-Root of the Product of two Numbers is called the geometrical Mean.

```
Investigation of Logarithms.
 6
  (1.) The Log. of i = 0
           Log. of 10 = 1
                                       And 1 × 10 =
                                     √10 = 3.1622777,

∴ the Logarithm of
                Sum = 1
      Arithmetical Mean 0.5
                                     3.1622777 is = 0.5.
  (2.) Hence we have the Logarithms of 3.1622777 and 10
given.
  Log. of 10 - - = 1.
                                        Hence the Log. of
  Log. of 3.1622777 = 0.5
                                     √ 10 × 3.1622777,
                                     viz. of 5.6234132 is
                                     0.75.
  (3.) We have now the Logarithms of 10 and 5.6234132
given.
                                    - its Log. = 1.
    Numbers
                                   - its Log. = 0.75
                   5.6234132
                                                  1.75
V 10 x 5.6234132 = 7.4989421 - - its Log. = 0.875
  (4.) Here we have the Log. of 10 and 7.4989421 given,
    Numbers
                                 Logarithms
                                               0.875
                   7.4989421 5
                                                1.875
10 × 7.4989421 = 8.6596431 - its Log. = 0.9375
 (5.) Hence we have the Log. of 10 and 8.6596431 given.
    Numbers
                  8.6596431
                                Logarithms
                                               1.9375
V 10 x 8.6596431 = 9.3057204 - its Log. = 0.96875
(6.) We have now the Log. of 8.6596431 and 9.3057204
                                  Their
                                           5 0.96875
given.
                9.3057204
                8,6596431 }
                              Logarithms 1 0.9375
                                             1.90625
 9.3057204×8.6596431
                                     its Log, 0.953125
```

And

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And proceeding after this Manner, after 25 Extractions, the Logarithm of 8.999998 will be found to be 0.9542425; which we take for the Logarithm of 9, because 8.999998 differs but 100000000 or 30000000 from 9.—— By the same Method, the Logarithms of the prime Numbers were found.

11. The Logarithms of the prime Numbers being found, the Logarithms of the Numbers composed of them are found by adding the Logarithms of the component Parts; the Reason of which is evident from the Definition in Art. 1. Take an Example. Given the Logarithm of z = 0.30103, and the Logarithm of z = 0.4771212, to find the Logarithm of $z \times 3$ or 6.

The Log. of 2 = 0.30103Log. of 3 = 0.4771212Log. of 6 = 0.7781512

12. The Logarithm of any Number being given, the Logarithm of any Number equal to the Square or Cube, &c. of that Number may be found, by multiplying the Logarithm of the Root by 2, 3, &c. respectively, according as the Power, whose Logarithm is to be found, is a Square, or Cube, &c. This is manifest by Art. 4.

13. Lastly, the Logarithm of any Power being given, the Logarithm of its Root is found by dividing that Logarithm by

the Index of the given Power, by Art. 5.

14. After the Method just now described the Tables of Logarithms were at first made: And, if we consider the great Labour and Patience necessary to the Accomplishment of so great a Work, how much are we beholden to Lord Neper and Mr. Brigs! Certainly their Names will and ought to be perpetuated from one Age to another, even to the End of the World!

There have lately been invented much easier Methods of confiructing Logarithms than the above; but, as they depend on Fluxions, Conic. Sections, &c. they cannot be understood in this Place; and it is sufficient to have shewn the Method by which the Tables were made, as we have now no Occasion to

construct new Ones.

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15. Having explained the Nature of making a Table of Logarithms of Numbers greater than Unity, the next Thing to be done is to shew how the Logarithms of fractional Numbers may be found. In Order to which, let it be observed, that, as we have hitherto supposed a geometrical Series to increase from an Unit on the Right-Hand, we may now suppose it to decrease from an Unit towards the Left-Hand, as here annexed.

Log. -3. -2. -1. 0. +1. +2. +3. &c. C. A. B. Numbers, 1000, 100, 100, 100, 1000, &c.

Here

Here the Series from the Point A, or Unity, increases towards

B, and decreases towards C.

It is evident, by a bare Inspection, that, if the Numbers are both Fractions, the Sum of their Logarithms is equal to the Logarithm of their Product: But if one Number is on the Right-Hand of the Point A, and the other on the Lest of it, (that is, if one Number is greater than an Unit, and the other a Fraction,) then the Difference of their Logarithms will be equal to the Logarithm of their Product; and the Logarithm of the Product will be on the same Side of the Point A as is the greater of the two Logarithms.

16. In Order to make a proper Distinction, we may denote the Logarithm of any Number greater than an Unit by the Sign +; for they may be reckoned affirmative; and then the

fractional Quantities must be considered as negative.

17. It is also evident, from Inspection of the above Series, that, if a Number, having an affirmative Logarithm, is divided by another Number whose Logarithm is a greater affirmat tive Number, the Difference of their Logarithms, taken negatively, will be the Logarithm of their Quotient. Thus, e.g. the Logarithm of 100 = 2, and the Logarithm of 1000 = 3; their Difference, taken negatively, is - 1 = the Logarithm of the Quotient of 100 - 1000. - This might have been deduced from the Nature of Fractions: For the Numerator of any Fraction may be esteemed as a Dividend, and the Denominator as a Divisor: Therefore, by the Nature of Logarithms, (Art. 1.) the Logarithm of the Numerator, minus the Logarithm of the Denominator, is equal to the Logarithm of the Fraction: But fince the Denominator of a proper Fraction is always greater than the Numerator, its Logarithm will be greater than that of the Numerator, and confequently it will be imposfible to take the Logarithm of the Denominator from that of the Numerator; therefore we are obliged to take the Logarithm of the Numerator from that of the Denominator, and express the Difference negatively, for the Logarithm of the Fraction.

18. The Logarithm of 1, 10, 100, 1000, &c. being 0, 1, 2, 3, &c. respectively, it is manifest that the Logarithms of the intermediate Terms may be considered as a mixed Number, made up of an Integer and decimal Fraction; and that the integral Part, called, by some Writers, the Index, (Lat.) by others, the Exponent, (from expono, Lat.) and by others, the Characteristick, (from Character, Lat.) is one less than the Number which expresses how many Figures the Natural Number consists of; e.g. if the Natural Number has 4 Places, the Characteristick of the Logarithm will be 3; if of 3 Places, 2; if

of 2 Places, I, &c.

19. Division being performed by Subtraction of the Logarithms, and the Logarithm of 10 being 1, it follows, that the Logarithm of 10 of any Number must be one less than the Logarithm of that Number. Thus, e.g. the Logarithm of 7851 being + 3.894925,

$$\begin{bmatrix}
\frac{7851}{10} = 785.1 \\
\frac{785.1}{10} = 78.51
\end{bmatrix}$$

$$\frac{785.1}{10} = 78.51$$

$$\frac{78.51}{10} = 7.851
\end{bmatrix}$$

$$\frac{7.851}{10} = .7851$$

$$\frac{.7851}{10} = .07851$$

$$\frac{.07851}{10} = .007851$$

The above affirmative Logarithms were found by successively subtracting the Logarithm of 10, viz. + 1 from the preceding Logarithm; then, to find the first negative Logarithm, + 1 (the Logarithm of 10) was to be taken from the Logarithm + 0.894925; but, as the Log. to be subtracted is greater than that from which it was to be taken, we are obliged to subtract the lesser 0.894925 from the greater 1, and express their Disference negatively, for the required Logarithm, (as directed in Art. 17,) which gives — 0.105075. Then, to find the other negative Logarithms, the Logarithm + 1 being to be subtracted from a negative Logarithm, we have only to add 1 successively, and express the Sum negatively; for, by Art. 46, Essay on Arithmetick, to subtract an Assirmative is the same as to add a Negative.

20. The Logarithms of Fractions may be expressed in such a Manner, that the fractional Part may be affirmative, and the Characteristick negative. Logarithms thus expressed are called binemial Logarithms, (from binomius, Lat.) and are better adapted for Practice than the negative Ones.

21. To find the binomial Logarithm of a proper Fraction.
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From the Logarithm of the Numerator subtract that of the Denominator; remembering, that when we come to the Characteristicks, the Characteristick of the Numerator is to be taken from that of the Denominator, (after having added the one that was borrowed, if any, to the Characteristick of the Denominator.) — N. B. By this Rule may also the Logarithm of a circulating Decimal be found, as the Decimal may be reduced to a Vulgar Fraction by the Rules in our Treatise of Circulating Decimals.

Example. The binomial Logarithm of $\frac{7.851}{10}$ is =-1+894925.

For the Logarithm of 7.851 = 0.894925, by Art. 19.

The Logarithm of 10 = 1.000000

The Log. of $\frac{7.851}{10}$ by this Rule = -1.+894925.

But this Logarithm is more commodiously wrote thus,

1.8942925; the Dash over the Characteristick shewing it is a negative Quantity, and the remaining Part affirmative.

Hence

* That the binomial Logarithms, found by this Rule, are, in Effect, the fame as the negative Logarithms afore described, may be thus shewn. Let $\frac{n}{d}$ be any proper Fraction; then, putting c for the integral, and r for the fractional Part of the Logarithm of n, we have c+r= Logarithm of n; and putting t for the Characteristick, and a= the decimal Part of the Logarithm of d, then t+a= the Logarithm of d. Hence, by Art. 17, t+a=c+r=t+a-c-r, taken negatively, (that is, changing the Signs,) viz. t-a+c+r=t the Logarithm of t.

But, for the binomial Logarithm, we have two Cases. Ist, When r is greated than a, then t-c, taken negatively, is -t+c; the binomial Logarithm, according to this Rule, is -t+c+r-a, which may stand thus, -t-a+c+r, which is the same as the above Expression for the negative

 Hence the Log. of $\frac{7.851}{10} = .7851$ is $= \overline{1.894925}$. of $\frac{.7851}{10} = .07851$ is $= \overline{2.894925}$. of $\frac{.07851}{10} = .007851$ is $= \overline{3.894925}$. &c.

Hence it is evident, that the decimal Part of the binomial Logarithm of a decimal Fraction is the same as that of an integral Number of the same Figures; and it is also manifest, that, if the fignificant Figure of the decimal Number is in the sirft Place, the Characteristic is — 1; if the fignificant Figure be in the second Place, the integral Part of the Logarithm is — 2, &c. And this is the Kind (of Logarithms) we shall make Use of in the remaining Part of this Essay, to express

fractional Quantities,

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22. In taking out of a Table the Logarithm of any Integer not exceeding 10000, we have the fractional Part by Inspection; to which we prefix, for a Characteristick, 3, if the Number consists of 4 integral Figures; 2, if of 3 integral Figures, &c. that is, the Characteristick must be one less than the Number of integral Places; But if the Number, whose Logarithm is required, be above 10000, then find the Logarithm of the two nearest Numbers to it that can be found in the Table, and say, * As their Difference: the Difference of their Logarithms:; the Difference between the nearest Number and that whose Logarithm is required: the Difference of their Logarithms nearly; which being either subtracted from, or added to, the nearest Logarithm, according as it is greater or less than the required one, will give nearly the Logarithm required. Take an Example.

Let it be required to find the Logarithm of 367182.

The fractional Part of the Logarithm of 3671 is by the Table .564784, and of 3672 is .564903; ...

The \$ 367100 is 5.564784 Nearest No. 367200 Log. of 2 367200 is 5.464903 The No. 367182

Their Dif. 100 and of Log. .00119

Diff. 18

.. As 100: .00119:: 18: .00021 nearly; .. 5.564903 -,00021 = 5.564882 nearly = the Logarithm of 367182.

C 2

This

^{*} Such Proportions are expeditionly worked on the Line of Numbers on the lavigation-Scale,

This Method being grounded on Supposition that the Logarithms of Numbers between 367100 and 367200 increase or decrease equally, according to their Distance from 367100 or 367200, is not strictly true, but nearly so; and the greater any Numbers are with Respect to their Disserence, the nearer will those Disserences be proportional; and therefore, though this will not give the exact Logarithm, yet it will be nearly so, and sufficiently near the Truth, for most Purposes either of Business or Pleasure.

If the Number does confist of both Integers and Fractions, find the fractional Part of the Logarithm as if all its Figures were Integers, and to that fractional Part prefix the Index belonging to the integral Part; viz. make the Characteristick one less than the Number of integral Figures, and you will have the

Logarithm fought.

Lastly, if the Number, whose Logarithm is required, be entirely fractional, find the fractional Part of the Logarithm, as if it was a whole Number, and to it prefix the Characteristick,—1, if the first Figure to the Lest-Hand be Tenths; but, if the first Figure be in the second Place, or Place of Hundreds, the Characteristick must be—2, &c.

23. When two or more Logarithms are to be added together, they may be added by the Rules for adding affirmative and negative Quantities in Algebra: That is, 1. If they are all affirmative, add them as in common Addition, and the Sum will be the affirmative Logarithm required. See Example in Art. 33.

24. Case 2. If the Characteristicks of the Logarithms to be added are all negative, add the decimal Parts together by common Addition; and if there is any Thing to be carried from the decimal Part to the integral Parts, it is affirmative, (by the Nature of binomial Logarithms,) which referve: Then find the Sum of the negative Characteristicks; which, being negative, the Difference betwitt this Sum and the Carriage, (above reserved,) with the Sign of the greater, will be the Characteristick required. See Example, Art. 36.

25. Case 3. When the Characteristicks of the Logarithms to be added are some affirmative, others negative — add the fractional Parts as usual; only the Carriage from the decimal Part to the integral, being affirmative, must be added to affirmative Characteristicks; whose Sum, including the Carriage, being found, and also the Sum of the negative Characteristicks, find the Difference of these Sums, and to it prefix the Sign of the greater, for the required Characteristick. See Ex. Art. 34,

26. When one Logarithm is to be subtracted from another, the Work may be done as in Subtraction of Algebra, by having

To find the Difference of two Logarithms. 13 due Regard to the affirmative and negative Quantities. But to

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Case 1. To subtract a less affirmative from a greater affirmative Logarithm, find their Difference, as in common Arithmetick. See Ex. Art. 40.

27. Case 2. When it is required to subtract a greater affirmative from a less affirmative Logarithm, it is the same as to find the Logarithm of a proper Fraction, and therefore may be found

as directed in Article 21. See Ex. Art. 41.

28. Case 3. When a binomial Logarithm is to be subtracted from an affirmative Logarithm, if the decimal Part of the affirmative Logarithm is greater than that of the Binomial, subtract the decimal Part of the Binomial from the decimal Part of the Affirmative, and prefix the Sum of their Characteristicks, with the affirmative Sign. But if the fractional Part of the binomial Logarithm be greater than that of the Affirmative, add, or suppose in your Mind 1 to be added to the fractional Part of the Affirmative; then subtract the fractional Part of the Binomial from that Sum; (but, because we added I for Convenience, we must also, to continue the Equality) add + 1 to the binomial Characteristick; but the Characteristick of the binomial Logarithm being negative, the adding + 1 to it is diminishing the negative Characteristick by Unity; which Characteristick, so diminished, being added to the affirmative Characteristick, will give the affirmative Characteristick of the required Logarithm. See Ex. Art. 42, 43.

29. Case 4. When an affirmative Logarithm is to be subtracted from a Binomial; if the fractional Part of the Binomial be greater than that of the affirmative Logarithm; to the Difference of their fractional Parts, place, for a Characteristic, the Sum of their Characteristicks, with the negative Sign: but if the decimal Part of the Binomial is less than that of the affirmative Logarithm, add 1 (or suppose it to be added in your Mind) to the fractional Part of the Binomial; and then subtract the decimal Part of the Affirmative from that Sum, and (to continue the Equality) add 1 to the Characteristick of the affirmative Logarithm; then the Sum of this, and the Characteristic of the Binomial, will, with the negative Sign, be the Characteristic

of the required Logarithm. See Ex. Art. 44, 45.

30. Case 5. When a binomial Logarithm is to be subtracted from a Binomial, if the fractional Part of that to be subtracted is less than that from which it is to be taken, find the Difference of their fractional Parts, to which prefix the Difference of their Characteristicks, with the affirmative Sign, if the Characteristic of the Logarithm to be subtracted is the greater; otherwise it must have a negative Sign. But if the fractional Part of the

Logarithm

Logarithm to be subtracted be greater than the fractional Part of the Logarithm from which it is to be taken, add I to the fractional Part of this last, that Subtraction may be made; and then, (to continue the Equality,) add I to the Characteristick of the Minorand, which Characteristick being negative, is done by Subtraction; viz. subtract I from the Characteristick of the Minorand; then the Difference between the Characteristick of the Minorand so diminished, and the Characteristick of the Subducend, will give the required Characteristick; which must be affirmative, if the Characteristick of the Minorand, after being diminished as above, is greater than that of the Subducend;

otherwise, negative. See Ex. Art. 46, 47.

31. Before we proceed to the Application of Logarithms, it will be proper to shew how to find the natural Number answering to any given Logarithm, by Help of a Table of Logarithms. And as this is only the Reverle of Article 22, it will be sufficient to hint, 1st, That the Index, or Characteristick, of the Logarithm, if offirmative, will shew how many integral Places are in the required Number : And, if negative, in what Place of Decimals the first or fignificant Figure stands. Hence, if the Logarithm can be found in the Table, the answering Number is found by a bare Inspection: But if it cannot be exactly found, fint the next greater and next lesser, and say, As the Difference of these two Logarithms: the Difference of the answering Numbers :: the Difference between the given Logarithm and the nearest tabular Logarithm : a fourth Number; which added to, or subtracted from, the natural Number answering to the nearest tabular Logarithm, (according as that Logarithm was less or greater than the given one,) will give the required Number very near the Truth.

Example. Let it be required to find the natural Number anf-

wering to the Logarithm 5.564882.

This in the Tables gives the next leffer and greater Logarithms, \{5.564784\}

garithms, \{5.564903\}

Numbers \{367200

Their Diff. .000119

100

And 5.564903 — 5.564882 = .000021. Hence, As .000119; 100:: .000021; or, which is the fame in Effect, As 119: 100:: 21: 17.7 nearly. Hence, 367200 — 17.7 = 367182.3, pearly = the required Number.

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CHAP. II.

MULTIPLICATION by LOGARITHMS.

32. WE now come to shew the Application of Logarithms, having explained their Theory at large; and the first Thing is to perform Multiplication by them; which is done by adding the Logarithms of the Factors together, as directed in Art. 23, 24, and 25.

Their Sum, by Art. 23, is 1.7481880 which answers in the Table to 56, the required Product.

34. Example 2. Multiply 203 by 0.25. Log. of 203 is 2.3074960 Add, by Art. 25.

This Log. 1.7054260 answers in the Table to 50.75.

35. Example 3. Multiply 7.677 by $\frac{5}{8}$. To Log. of 7.677 \rightleftharpoons 0.8851915 Add Log. of 5 \rightleftharpoons 0.6989700

From 1.5841615 Subtract Log. of 8 = 0.9030900

Gives Log. of 4.798 nearly, 0.6810715

Or thus: Put $\frac{5}{8}$ into Decimals, viz. $\frac{5}{4} = .625$. Then, Log. 7.677 = 0.8851915

Log. of 5 or of .625 = 1.7958800

Their Sum, by Art. 25, is 0.6810715 as above.

16 Multiplication by Logarithms.

36. Example 4. Multiply 0.55 by .023.

Log. .55 is 1.7403627 Add, by Art. 24:

Log. of .01265 2.1020905

37. Example 5. Multiply 80 by .003. Log. 80 = 1.9030894 Log. .003 = 3.4771212
Add, by Art. 25.

Log. .24 = 1.3802116

38. Example 6. Multiply 10, 80, 72, .5, .4, and .12, together. — This is done by Art. 25.

Log. 10 = 1.0000000 | Log. .5 = 1.6989700 |
Log. 80 = 1.9030894 | Log. .4 = 1.6020600

Log. 72 = 1.8573325 | Log. .12 = 1.0791812

To 4.7604219 | Z.3802112

This Log. 3.1406331 answers in the Table to 1382.4 [nearly.

CHAP. III.

DIVISION by LOGARITHMS.

39. THE Subtraction of Logarithms answering to the Division of the natural Numbers; from the Logarithm of the Divisor, by the Rules in Art. 26, 27, 28, 29, 30; and the Remainder will be the Logarithm of the required Quotient.

40. Example 1. Divide 56 by 4. See Art. 26.

Log. 56 = 1.7481880

Log. 4 = 0.6020600

Log. 14 = 1.1461280

41. Example 2. Divide 5 by 8. See Art. 27. Log. 5 = 0.6989700 Log. 8 = 0.9030900

Log. .625 1.7958800

42. Example 3. Divide 50.75 by .25. See Art. 28. Logarithm of 50.75 = 1.7054360

Log. of .25 = 1.3979400

Log. of 203 = 2.3074960

43. Example 4. Divide 4.718 by .625. See Art. 28. Log. of 4.718 = 0.6737579

Log. of .625 = 1.7958800

Log. of 7.549 ferè = 0.8778779

44. Example 5. Divide .75 by 100. See Art. 29.

Log. of .75 = 1.8750613 Log. of 100 = 2.0000000

Log. of .0075 = 3.8750613

45. Example 6. Divide .24. by 80. See Art. 29.

Log. of .24 = 1:3802112 Log. of 80 = 1:9030900

Log. of .003 = 3.4771212

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46. Example

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18 The Golden Rule by Logarithms.

46. Example 7. Divide .75 by .25. See Art. 30.

Log. of .75 = 1.8750613

Log. of .25 = 1.3979400

Log. of 3 = 0.4771213

47. Example 8. Divide .01265 by .55. See Art. 30.

Log. of .01265 = 2.1020905

Log. of .55 = 1.7403627

Log. of .023 = 2.3617278

CHAP. IV.

The GOLDEN RULE by LOGARITHMS.

ROM the Nature of the Golden Rule, and Logarithms, we have this Rule. Add the Logarithms of the fecond and third Terms together; from their Sum fubtract the Logarithm of the first Term; and the Remainder will be the Logarithm of the fourth, or required Term.
49. Suppose, in the Rule of Three Direct, we have this

Stating, As 4.1: 5:: 65: a fourth Number.

To the Log. of 5 = 0.6989700

Add the Log. of 65 = 1.8129134

2.5118834 Subtract Log. of 4.1 = 0.6127838

Log. of 79.26 nearly 1.8990996

50. If, from the Logarithm of 1, be subtracted the Logawithm of any Number, the Remainder is called the Arithmetical Complement of that Logarithm. Hence, the Arithmetical Com-plement of the Logarithm of any Number is equal to the Logarithm of the Quotient of I divided by that Number.

51. When

51. When it is required to divide one Number by another, it is in Effect the same, if we divide 1 by the Divisor, and multiply that Quotient by the given Dividend. (For

 $\frac{a}{m} = \frac{1}{m} \times a$.) Which is done by Logarithms, by adding

the Logarithm of the Dividend to the Arithmetical Complement of the Logarithm of the Divisor.

52. Hence, the Operation of the Example in Art. 49. may

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From Log. of 1 = 0.00000000
Subtract Log. of 4.1 = 0.6127839

Gives Arith. Comp. = 1.3872161

Gives Log. as above 1.8990095

CHAP. V.

INVOLUTION by LOGARITHMS.

53. To raise any Number to a given Power by Logarithms, multiply the Logarithm of the Root by the Index of the given Power. Thus, for Instance, if we are to square any Number, we must multiply its Logarithm by 2; if to cube a Number, by 3, &c. and the Product (by Art, 4.) will be the Logarithm of the required Power.

Note, If the Root be a Fraction, its Logarithm will be a Binomial; in such Case, the Carriage from the decimal Part in multiplying being affirmative, and the Product of the Characteristick negative, the Carriage must be subtracted from that negative Product, for the required negative Characteristick,

CHAP. VI.

EVOLUTION by LOGARITHMS.

56. TO extract the Root of any Number, divide the Logarithm of the Power by its Index, viz. to extract the Square-Root, divide by 2; for the Cube-Root, by 3, &c.

See Art. 5.

Note. In extracting the Root of a fractional Number, if we cannot divide the Charactericick exactly by the Index of the Power, it will be proper to increase the Characteristick by the Addition of such a Number as will make it exactly divisible by the Index of the Power, and then divide the Characteristick so increased: But (since increasing the negative Characteristick by any Number is really diminishing the Logarithm by that Number, we must, in Order to continue the Equality, add it to the Logarithm again; therefore, the next Place of the Logarithm being Tenths, each Unit in the Characteristick is equal to Ten in the Place of Tenths; therefore,) for every Unit which we added to the Characteristick, we must now add Tens to the Place of Tenths, and divide as usual.

58. Example 2. Extract the Cube-Root of . 166375.

Log. of .166375 =
$$\frac{1.2210881}{\frac{1}{3}}$$

Log. of .55 = $\frac{1.7403627}{\frac{1}{3}}$

Here, to the Characteristick 1, to make it divisible by 3, we

add 2, and the Sum is 3; \(\frac{1}{3}\) of which is 1, for the Characteristick of the Log. of the Root: Then, to continue the Equality, we add 2 to the Place of Tenths, which makes how many Times 3 in 2.2, which gives .7, &c.

CHAP. VII.

The APPLICATION of LOGARITHMS to FELLOWSHIP.

As in Fellowship, the first and second Terms continue the same in all the Statings: From the Logarithm of the second Term subtract the Logarithm of the first Term, and call the Remainder the reserved Logarithm: Then, this reserved Logarithm being added to the Logarithm of the third Term of each respective Stating, will give the Logarithm of the fourth, or required Term of that Stating. The Reason of this is manifest from the Nature of Logarithms and Chap. VIII. of the Second of the Mathematical Essays.

60. Example. Suppose 4 Men, A, B, C, and D, trade in Company; A put in 50l. B, 16l. C, 25l. and D, 18l. 10l. they gained 20l. 15s. What was each Man's Part?

Here the Statings would be,

L. L. L. L. A's Share.

109.5: 20.75:: 50: A's Share.

109.5: 20.75:: 16: B's Share.

109.5: 20.75:: 25: C's Share.

109.5: 20.75:: 18.5: D's Share.

eration by Logarithms will be as follows.

The Operation by Logarithms will be as follows.

From Log. of £. 20.75 = 1.3170181

Subtract Log. of 109.5 = 2.0394141

The Referved Log. = 1.2776040

Log. 50 = 1.6989700

Referved Log. = 1.2776040

Sum = 0.9765740 the Log. of A's Part, answering in the Table to 9.474851.

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Log. of 16 = 1.2041200

Referved Log. = 1.2776040

Log. of B's = 0.4817249 answers to [£. 3.031952,

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Log. 25 = 1.3979400

Referved Log. = 1.2776040

Log. of C's Part = 0.6755440 answering to [4.737425.

Log. of 18.5 = 1.2671717

Referved Log. = 1.2776040

Log. of D's Part = 0.5447757 answering [to 3.5056945.

CHAP. VIII.

SIMPLE INTEREST by LOGARITHMS.

A DD the Logarithms of the Principal, Time, and Rate, together; the Sum will be the Logarithm of the Interest.

62. Example. What is the Interest of 4101. 101. for 1 Year and 40 Days, at 51. per Cent. per Annum?

The Time 1 Year 40 Days = $\frac{40}{365} = \frac{81}{73}$. Hence,

The Logarithm of the Time is 0.0451622

Log. of 410.5 the Principal = 2.6133132

Log. of .05 the Rate = 2.6989700

Sum = 1.3574454 the Log. of 22.77431. = 221. 15s. 5 4d. for the Interest. Q. E. I.

CHAP. IX.

COMBOUND INTEREST by LOGARITHMS.

of 1/2. for one Year, by the Time, and to the Product add

add the Logarithm of the Principal; the Sum will be the Logarithm of the Amount.

64. Example. What will 2101. 7s. 6d. amount to in 3 Years, at 5 per Cent. per Annum?

Solution. First, 210l. 7s. 6d. = 210.375l. and the Amount of 1l. for one Year at 5 per Cent. per Annum = 1.05.

Hence multiply the Log. of 1.05 = 0.0211893 By the Time = 3

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Add Log. of 210.375 = 2.3229940

Log. of Amount 243.53531. = 2.3865619

Hence the Amount is 243l. 10s. $8\frac{1}{2}d$ nearly.

65. Scholium. Mr. Townley, and a few others, instead of the negative Characteristicks, write their arithmetical Complements: Thus, for the Log. of .05, they would write

8 6989700, and for the Log. of .005 place down 7.6989700, &c. And the Rule for adding such Logarithms is, If your Characteristicks be negative, add them as in common Arithmetick, only noting, that if the Sum of the Characteristicks be less than 10, add 10; if just 10, add Unity; if more than 10, cast 10 away; the Sum, or Remainder, will be the required Logarithm, according to their Method. But if the Characteristicks are of different Names, viz. one affirmative, the other negative, add them together as in common Addition; but if the Sum be 10, or more than 10, cast 10 away, the Remainder will be affirmative; but if less than 10, negative.

66. Example. Multiply 203 by 25. Log. of 203 is 2.3074960

Their Log. of 25 is 9.3979400

Log. of 50.75 = 1.7054360

67. As for Division by Logarithms, they perform it after this Manner, viz. If one or both be negative, and the Characteristick of the Dividend is least, add 10 to it; but if the Characteristick of the Dividend be the greater, subtract as usual, and the Characteristick of the Remainder in the first Case will be assimative; in the latter, negative.

68. Example. Divide .01265 by .55.

Log. of .01265 with their Index 8.1020905

Log. of .55 with their Index 9.7403627

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Log. of .023 with their Index 8.3617278

69. Though this last Method, of writing the arithmetical Complements for the negative Characteristicks, may be something sooner learnt by such Persons as are ignorant of the Nature of affirmative and negative Quantities, yet we would recommend the former Method as the most rational, and worthy the Notice of the more ingenious Reader.

70. Thus much is sufficient at present to illustrate the Theory and Application of Logarithms: More expeditions Ways of constructing Tables, &c. are intended to be shewn at some other Opportunity. All that Room will permit us to add, before we conclude this Essay, is,

A COMPENDIOUS HISTORY OF LOGARITHMS.

71. The Honour of the Invention of Logarithms is sufficiently secured to Lord John Neper, Baron of Merchiston in Scotland, by the Testimony of all who have treated on the Subject, as well Foreigners as Inhabitants of Britain.

In 1614, Lord Neper published, at Edinburgh, a Canon of Logarithms, in which o is taken for the Logarithm of Radius, (or 10000000000,) and the Logarithms of the Sines are affir-

mative.

This Book, being in Latin, was translated into English by Mr. Edward Wright, and, after his Decease, published by his

Son, Samuel, in the Year 17.16.

The great Usefulness of Logarithms was immediately perceived by the learned Mathematicians of the Age, as the Invention of them is universally allowed to be one of the most useful Discoveries in the Art of Numbers: for, as Dr. Keil justly observes, "It is by their Means that Numbers almost infinite, and such as are otherwise impracticable, are many maged with Ease and Expedition. By their Assistance, the

"Mariner steers his Vessel, the Geometrician investigates the Nature of the higher Curves, the Astronomer determines

" the Places of the Stars, and the Philosopher accounts for

to other Phænomena of Nature; and, lastly, the Usurer com-

Soon after their Discovery, Mr. Briggs (then Professor of Geometry at Gressam College, London) was so charmed with the noble Invention, that he went twice to Scotland, on Purpose to consult with the Inventor, and assist him in perfecting his Design: at their first Consultation, they agreed to change the Form of the Logarithms into a more compendious one; in which the Logarithm of 1 was to be 0, and 1000000, &c. the

Logarithm of Radius.

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In the Year 1619, the noble Inventor being dead, his Son, Lord Robert, published the Construction of the admirable Canon; in the Preface of which, he takes Occasion to mention the great Friendship his Father had for Mr. Briggs, on whom now the whole Labour of calculating Tables entirely devolved. This did not discourage Mr. Briggs; for, applying himself to the Work with a Degree of Industry that surprized the whole World, he published, at London, in 1624, his Arithmetica Logarithmica, agreeable to the new Form, for the first 20 Chiliads of Logarithms, (or from 1 to 20000,) and for 11 Chiliads more, viz. from 90000 to 101000, calculated to 14 Places of Figures. He also gave Directions for supplying the intermediate Chiliads.

In the Year 1627, Adrian Vlac (or Flack) published a Canon to 10 Places of Figures, in which the intermediate Chiliads were filled up, according to Mr. Briggs's Directions.

In 1633, Vlac published Briggs's Logarithms of Sines and Tangents to every 10 Seconds, and of Numbers from 1 to 20000.

In the Year 1658, Dr. John Newton published, at London, Trigonometria Britannica, in which are Tables of Logarithms of Numbers from 1 to 100000, and also the Logarithms of Sines and Tangents to Too Parts of every Degree.

Sherwin's Tables, containing the Logarithms taken from Dr. John Newton, and Gardener's, containing the Logarithms of Numbers taken also from Dr. John Newton, and the Logarithms of Sines and Tangents to every 10 Seconds, taken from

Vhac's Canon Magnus, are now much esteemed.

We must not, however, forget Mr. Dodson's Antilogarithmic Canon, published in the Year 1742; being a Table of Numbers, confishing of 11 Places of Figures, corresponding to all Logarithms under 100000; which indeed is a laborious and ingenious Work.

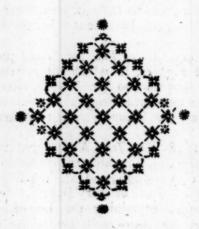
Other Authors, who have laboured in compleating Tables, &c. are, in the Year 1619, Speidell and Ursinus; in 1020, Gunter; in 1624, Wingate; in 1625, Ursinus again, and Kepier; in

26 Compendious History of Logarithms.

1626, Henrion; in 1627, Speidell, and Kepler again in his Rudolphine Tables; also some Time before this, Gellibrand, as in Vlac's Trigonometria Artificialis, published this Year. (The explanatory Part is an Abridgement of Gellibrand's Trigonometry.) In the Year 1631, Norwood; in 1632, Cavalerius; in 1633, Rowe; in 1634, Frobenius; in 1670, Caramuel: Since which Time, Dr. Gregory, Mercator, Sir Isaac Newton, Dr. Halley, William Jones, Esq. and a Number of other learned Men, have published infinite converging Series, for computing Logarithms more expeditiously; some of which we may have Occasion to explain hereafter.

It would be endless to give a List of all the Authors who have touched on Logarithms; because almost all who have treated on Trigonometry, on Navigation, &c. have given compen-

dious Tables of Logarithms, &c.





A

COMPENDIUM

OF

PLANE TRIGONOMETRY.

Theorem 1. A S the Base of any right-angled Triangle: the Perpendicular: Radius or Tangent of 45 Degrees: the Tangent of the Angle at the Base.

Theorem 2. As the Sine of any Angle : its opposite Side ::

the Sine of any other Angle :: to its opposite Side.

Theorem 3. As the Sum of any two Sides: their Difference: the Tangent of Half the Sum of the two opposite Angles: the

Tangent of Half their Difference.

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Theorem 4. The three Angles of any Plane Triangle are = 180 Degrees; therefore any Angle being subtracted from 180 Degrees, the Remainder will be the Sum of the other two Angles.

Theorem 5. Half the Difference of any two Angles, added to Half the Sum of the same Angles, will give the greater of the

Angles; but, subtracted, will give the lesser Angle.

Theorem 6. In any Plane Triangle, as the Base (or longest Side): the Sum of the other two Sides: their Difference: the Difference of the Segments of the Base; which being subtracted from the Base, and the Remainder divided by 2, the Quotient will give the segment; and the Difference of the Segments being added to the short Segment, the Sum will be the long Segment. Note, the Segments are made by letting fall a Perpendicular from the Angle opposite the Base, and so dividing the oblique Triangle into two right-angled Triangles.

These Theorems solve all the common Cases of Plane Tri-

angles, both right and oblique.

A COMPENDIUM of RIGHT-ANGLED SPHERICAL TRIANGLES.

HE Sides about the Right-Angle are called Legs; and

the Side opposite, the Hypothenuse.

All the common Cases of right-angled spherical Triangles may be solved by Lord Neper's general Rule; viz. The Product of the Sine of the middle Part and Radius is = the Product of the Tangents of the adjacent Extremes, or Cosines of the opposite Extremes.

N. B. The Hypothenuse, Legs, and Angles at the Hypothenuse, are called Parts; and any two of these Parts being

given, the third may be found.

If the two Parts given, and that required, are not separated from each other by any unknown Part, then that Part which is in the Middle is called the Middle Part, and the two others, Extremes Conjunca. But if they are separated from each other by an unknown Part, then that Part which is separated is called the Middle Part, and the other two, Extremes Disjunca.

The Hypothenuse and Angles are always to be looked on as Complements in themselves; and therefore, when the Hypothenuse or an Angle is the Middle Part, it will be, in the Canon, S. C. or Cosine: When the Hypothenuse or an Angle is an adjacent Extreme, it will be Tangent-Complement; and when an opposite Extreme, it will be Sine (the Cosine of a Complement being a Sine).

From the general Rule it also follows, that when one Extreme is required, the other must be the first Term in the Canon: But when the Middle Part is required, Radius must be the first

Term.

A COMPENDIUM of OBLIQUE SPHERICAL TRIANGLES.

Theorem 1. IN all spherical Triangles, the Sines of the Sides are in direct Proportion as the Sines of their opposite Angles; et contra.

Theorem 2. The Cosines of the Bases (made by letting fall a Perpendicular) are directly proportional to the Cosines of the Hypothenuses; et contra.

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Compendium of oblique Spherical Triangles. 29

Theorem 3. The Tangents of the Sides or Hypothenuses are reciprocally proportional to the Tangents of the Angles at the Bases; et contra.

Or the Sines of the Bases are directly proportional to the

Cotangent of the same Angles; et contra.

Note, Direct Proportion is from one Thing to another, in the same right-angled Triangle; and reciprocal Proportion is from one Thing in one right-angled Triangle, to another Thing in the other right-angled Triangle.

The Perpendicular must always be let fall from the End of a

given Side, and opposite to some given Angle.

If the Angles, at the Base of the oblique Triangle, are both acute or both obtuse, the Perpendicular will fall within the Base: But, if one is acute and the other obtuse, without the Triangle; and then the Base must be produced to meet it.

These Hints are sufficient to enable those, who have already learnt the Doctrine of spherical Triangles, to solve ten Cases; the two remaining Cases may be solved by the following Direc-

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Case 11. Given, the three Sides to find an Angle. Add the three Sides together, and, from their Half-Sum, subtract the Side opposite the required Angle, and call the Remainder the Excess. Then, to the arithmetical Complement of the Logarithm-Sines of the Sides, containing the required Angle, add the Log. Sine of the Half-Sum and the Log. Sine of the Excess. Then will the Half-Sum of these four Logarithms be the Logarithm-Cosine of Half the required Angle.

For the Navigation-Scale, the following Canons are best adapted, viz. As Radius: S. of one of the containing Sides, :: the Sine of the other containing Side: fourth Sine. Then, as that fourth Sine: the Sine of the Half-Sum, (found as above-directed,):: the Sine of the Excess: contained Angle on the

Line of Versed-Sines.

Case 12. Given, the three Angles to find a Side. This may be done by the eleventh Case, by accounting the Sides Angles, and the Angles Sides.

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NAVIGATION

EPITOMIZED.

I T being intended, in this Volume, to give a more complete fet of Tables, for the several Purposes of Navigation, than has been hitherto published, I would here gladly treat of Navigation at large; but, for Want of Room, that Design must be referred to another Volume; which, if Encouragement be given, is intended to be published as soon as conveniently may be. At present, all that Room will permit is to give the most useful Rules in a summary Manner, which may serve as a Synopsis, or Memorial-Book, to the young Navigator.

2. The grand Object of Navigation is to conduct a Ship from one Port to another: In Order to which, the Mariner must at all Times be able to find the Course and Distance from one Place to another, and to determine the Place of the Ship every Day; or, in other Words, to keep a Journal; which is

effected by the following Rules.

3. Problem 1. To find the Course and Distance from one Place to another.

1st. Take from a good Chart, or out of Table XXXVIII.

the Latitudes and Longitudes of the two Places.

2dly. If the Latitudes are both North, or both South, subtract; but if one be North, and the other South, add them together, for the Difference of Latitude; which Degrees bring into Sea Miles, by multiplying by 60.

3dly. If the Longitudes be both East, or both West, subtract; but if one is East, and the other West, add them, for the *x Longitude; which also bring into Miles, by multiplying

by 60.

4thly. Then, by the Navigation-Scale which I have improved, or by Table X. find the meridional Miles (or Parts) for

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^{*} N. B. It is common amongst Navigators to write x Lat, or x Long. for Difference of Latitude, or Difference of Langitude.

for each Latitude; and if the Latitudes are both North, or both South, subtract; but if one is North, and the other South, add the meridional Miles, for the meridional x Lati-

5thly. Then, on the Navigation-Scale, or by Logarithms, work, As meridienal x Latitude: the x Longitude:: the x of Latitude: the Departure.

6thly. Then, as x Latitude : the Departure :: Tangent of

45 Degrees : the Tangent of the Course.

7thly, and lastly, as the Sine of the Course: the Departure :: Radius 90°: the Distance; or, as Sine-Complement of the Course: the x Latitude:: Radius, or Sine of 90 Degrees: the Distance.

4. N. B. These Canons may be worked in two Minutes, on the Navigation-Scale, and to a sufficient Degree of Exactness: and I would here, once for all, advise the young Student to make himself well acquainted with working Canons on the Scale, it being very expeditious, and sufficiently exact for most

Purposes of Navigation.

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5. At Sea, the Person who has the Charge of the Watch writes, on a Board, called a Log-Board, the several Courses and Distances sailed each Day; as also the Wind: But one very material Thing is generally omitted and left to every one to guess for himself; that is, the Lee-Way; as if a Person, who is asseep in his Cabbin, can be as good a Judge of the Lee-Way, made by the Ship, as the Person who is on the Deck, and has an Opportunity of observing it.

6. Different Ships will make different Lee-Way, under the fame Wind and Sail; and therefore no certain Rules can be laid down: However, to affift the young Navigator, the following Rules have been given in feveral English Treatifes: They were presented to Mr. William Jones by Mr. John Buckler,

and published about the Year 1700.

Rule when a Ship is close hauled, has all her Sails set, the Water smooth, and a moderate Gale of Wind, the is supposed to make little or no Lee-Way.

2d. When it blows so fresh, that the small Sails are taken in,

allow I Point.

3d. When the Top-sail must be close-reefed, allow 2 Points.
4th. When one Top-sail must be banded, allow 2½ Points.

5th. When both Top-Sails are to be taken in, allow 31 Points.

6th. When the Fore-Course is banded, allow 4 Points.

7th. When trying under the Main-fail only, allow 5 Points.

8th. When both Main and Fore Courses are taken in, allow 6 Paints.

9th. When the tries a Hull, or all Sails banded, allow 7 Points.

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When the Wind has blown hard in either Quarter, and shifts across the Meridian into the next Quarter, the Lee-Way will be lessened.

But, in all the Cases, Respect must be had to the Roughness of the Sea, with the Trim of the Ship, which must be left to

the Judgment of the Mariner.

A cheap Instrument may easily be constructed for observing the Lee-Way; but, for Want of Room, its Description must be omitted in this Place, but is intended to be given in the Elements of Navigation.

7. The Courses and Distances on the Log-board must be cor-

rected by the Lee-Way, and Variation of the Compass.

8. If there is no Azimuth-Compass on-Board the Ship, the Variation had best be taken from Table XXXVI. but if it can be conveniently done, it will be proper to find the Variation of the Compass by an Observation of an Amplitude or Azimuth.

9. Problem 2. To find the Variation of the Compass by an Amplitude.

Set the Sun at rifing or fetting by the Compass; then the Difference between this Bearing and the Amplitude; found by Table XII. will give the Variation.

10. To explain the Method of finding the Variation of the Compass by an Azimuth, would take up more Room than we can conveniently spare, but may be found, if required, in al-

most every Book on Navigation.

11. I have generally found the Variation and Tide Infrument improved (which I published some Time since, Price 21.) of great Use, in explaining the Nature of these Things, to young Students in Navigation.

12. Problem 3. The Course and Distance being given, to find the x Lat: tude and Departure.

The Canons are, 1st, as Radius 90°: the Distance :: S. Course: the Departure.

zdly, As Radius : the Diffance :: S. C. Courfe : the x La-

Or against the Course and Distance, in Table VII. may be

found, in their proper Columns, the x Latitude and Departure.

13. By this Problem the x Latitude and Departure must be found on every Course sailed in a Day, and collected into a Table, divided into proper Columns of N. S. E. W. Then add up the respective Columns, and find the Difference between the North and South Columns, and also between the East and West Columns, to see whether the Ship has, on the Whole, that Day,

gone

gone to Northward or Southward; also to Eastward and Westward; and how much; which will be the x Latitude and Departure made that Day.

- 14. Problem 4. Having the Latitude and Longitude, sailed from the preceding Day, given, with the x Latitude and Departure, made the present Day, found by the last Problem, to find the Ship's Place, or Latitude and Longitude in.
- 1. Take the x Latitude in Miles, and divide it by 60, to turn it into Degrees: Then, if the Latitude sailed from, and the x Latitude, be both North, or both South, add them together for the Latitude in; but if one is North, and the other South, their Difference will be the Latitude in, and of the same Name as the greater Quantity.

2. To find the x Longitude :

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Add the Latitude sailed from, and Latitude in, together; and if they are both North or both South, take Half the Sum, for a middle Latitude: But if one is North and the other South, take if for a middle Latitude.

Then the Canon is, as S. C. middle Latitude : the Depar-

ture :: Radius 90° : the x Longitude.

Or the x Longitude may be found by Inspection of Table VIII. for, taking the Complement of middle Latitude, as a Course, against the Departure in its proper Column, in the Column of Distance will be the x Longitude in Miles; which bring into Degrees, by dividing by 60.

Then, if the Longitude failed from, and x Longitude, be both East or both West, add them for the Longitude in: But if one is East and the other West, subtract one from the other, and the Remainder will be the Longitude in, and of the same

Name as the greater Quantity.

15. The preceding Rules are sufficient to keep a Journal by what is called Dead-Reckoning; but, as it frequently happens that the Latitude can be more accurately determined by taking the Meridian Altitude of the Sun or Star, it will be necessary to give the following Problems.

16. Problem 5. To find the Time of any Star's Southing.

Rule. Subtract the Right-Ascension of the Sun from the Right-Ascension of the Star, adding 24 Hours, if Subtraction cannot be made without; the Remainder is the Time of the Star's coming on the Meridian from Noon: But if the Remainder exceeds 12 Hours, subtract 12 Hours from it, and the Remainder is the Time from Midnight.

17. Problem 6. To find the Latitude of a Place by the Meridian Altitude of the Sun or a Star.

This admits of feveral Cases.

Case 1. If the Sun comes to the Meridian in the South, and the Declination be North, then the Declination, added to the Complement of the Meridian Altitude, or Zenith-Distance,

gives the Latitude of the Place.

18. Case 2. If the Sun or the Star comes to the Meridian in the North, and hath North Declination, then subtract the Zenith-Distance from the Declination; the Remainder is the Latitude North: But if the Declination be less than the Zenith-Distance, subtract the Declination from it, and the Remainder is the Latitude South.

19. Case 3. If the Sun or Star comes to the Meridian in the North, and hath South Declination, the Declination, added to the Complement of the Meridian Altitude, is the Latitude

South.

20. Case 4. If the Sun or Star comes to the Meridian in the South, and has South Declination, subtract the Complement of Meridian Altitude from the Declination, and the Remainder is the Latitude South.

But if the Complement of Meridian Altitude exceeds the Declination, subtract the Declination from it, and the Re-

mainder is the Latitude North.

21. Case 5. If the Sun be in the Zenith, (that is, right over Head,) the Declination and Latitude of the Place are equal and of the same Name.

22. Case 6. If the Sun has no Declination, the Complement of Meridian Altitude is the Latitude; which is either North or South, according as the Ship is to the Northward or Southward of the Equinoctial: Or, in other Words, if the Sun comes to the Meridian in the South, it is North Latitude; but if in the North, it is South Latitude.

23. In all the preceding Rules for finding the Latitude by Observations, it is supposed that the Altitudes of the Sun are truly taken; but the Altitude found by the Quadrant must be corrected as shewn in the Uses of Tables XVII. XVIII. and XX.

We shall conclude with the following useful Problem, as it frequently happens that the Sun is obscured at 12 o'Clock.

Problem 7. To find the Latitude of a Place, or Ship, at Sea, by two Altitudes of the Sun, taken by a Quadrant; and the Time between the two Observations, as observed by a good Watch.

Rule 1. To the Complement-Arithmetical of the Logarithm-Cofine of the Latitude, by Journal, add the Complement-Arithmetical Arithmetical of the Logarithm-Cosine of the Sun's Declination, and call their Sum the Log. Ratio.

N. B. Take out the Logarithms only to five Places of Deci-

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2. From the Natural-Sine of the greatest Altitude, subtract the Natural-Sine of the least Altitude, and find the Logarithm of their Difference by Table I. and write under it, the Log. Ratio.

3. With Half the elapsed Time, enter Table IV. and from the Column of Half-elapsed Time take out the Logarithm answering thereto, which is to be set down under the other two.

4. Add these three Logarithms together, and with their Sum enter Table IV. in the Column of Mid. Time; where having sound the Logarithm nearest thereto, take out the Time corresponding to it, and put under it, Half the elapsed Time: Subtract the lesser from the greater; their Difference will be the Time from Noon, when the greatest Altitude was taken.

5. With this Time enter Table IV. and from the Column of Log. Rising take out the Logarithm corresponding thereto: From this Logarithm subtract the Log. Ratio; the Remainder will be the Logarithm of a Natural-Number; which being found in Table I. and added to the Natural-Sine of the greatest Altitude, will give the Natural-Sine of the Meridian Altitude of the Sun; which therefore may be found in Table III.

6. From the Meridian Altitude of the Sun, the Latitude of

the Place of Observation may be obtained, by Problem 6.

7. N. B. If the Latitude found by the above Rules should differ considerably from the assumed Latitude, it will be proper to work again, making Use of the Latitude last found, instead of the Latitude by Account; and so on, until the Result gives a Latitude nearly equal to the Latitude used in the Computation.

25. Cautions in checfing the Times for making the Observations.

1. The two Altitudes should be always taken between Nine in the Morning and Three in the Afternoon; but the nearer they are to Noon, the better, provided there be a sufficient Interval between them.

2. If both Altitudes are taken in the Forenoon, the Interval of Time between them should not be much less than Half the

Distance of the first Observation from Noon.

3. If both Altitudes are taken in the Afternoon, the Interval between them should not be much less than the Distance of the first Observation from Noon.

4. If one Altitude is taken in the Forenoon, and the other in the Afternoon, the Interval of Time should not exceed four Hours and a Half.

5. If the Sun's Meridian Zenith-Distance be considerably less than the Latitude of the Place, then the Altitudes should be

taken proportionably nearer to Noon.

26. Example. At Bideford, in Devenshire, November 30, 1761, at 9h 53' 10" by the Clock, I took the Altitude of the Sun, which, when corrected by the Sun's Semidiameter and Refraction, was 12° 7'; and, at 19h 53 50", another Altitude, which, corrected, was 15° 47': The Sun's Declination was 21° 45'. The true Latitude of Bideford I have found, by many Observations, to be 51° 3' N. but we will suppose it to be called 51° 40' N. Required the true Latitude.

Times.
h / 1/
10 53 50
9 53 10

Difference 1 0 40

o 30 20 Half the elapsed Time. Latitude supposed 51° 40' Arith. Co. of Log. Cosine 0.20744 + Sun's Dec. 21° 45' Arith. Co. of Log. Cosine 0.03207

Gives the Log. Ratio 0.23951 ter Altitude 15° 47' Nat. Sine 27200

Greater Altitude 15° 47' Nat. Sine 27200 Least Altitude 12 7 Nat. Sine 20990

> Common Lcg. of - - - 6210 is 3.79309 + Log. Ratio - - - .23951 Elapsed Time 30' 20" in its proper Table .87953

> > 4.91213 This

of

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in Column of middle Time gives 1h 36' 30"

— ½ elapsed Time - - 0 30 20

Difference gives 1 6 10 the Time from
Noon when the greatest Altitude was taken: This in Column
of Log. Rising gives - 3.61686
- Log. Ratio - 0.23951

3.37735 This

in a Table of common Log. gives - - 2384 + Greater Altitude 15° 47' Nat. Sine 27200

29584 This in Table

Navigation epitomized.

of Nat. Sines gives Meridian Altitude - 17°12' This fubtracted from

Gives the Sun's Zenith-Distance 72 48
— Sun's Dec. 21 45

Gives Latitude of Bideford, very exact 51 3

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ble of N. B. If the Latitude found by these Rules differs considerably from the Latitude by Account in the Journal, it would be adviseable to take the Latitude found by these Rules, for the assumed Latitude, instead of the Latitude by Account, and work again for the Latitude.

It is intended to treat more largely of this valuable Problem in The Elements of Navigation.



AN



AN

INTRODUCTION

TO THE

Use of the Tables contained in this Volume.

1. THE first Table is a Table of Logarithms.

Logarithms are Numbers so artificially contrived, and adapted to other Numbers, that, by their Addition or Subtraction, the Product or Quotient of the Numbers to which they are adapted may be found.

2. The Numbers in our Tables are only the decimal Parts of the Logarithms, and the Number to be prefixed to it is called

the Index.

3. The Index is denoted by a Number expressing one less than the Number of integral Places in the Number whose Logarithm is required: Thus, if the Number consists of one Place of whole Numbers, the Index is 0; if of two Places, it is 1; of three Places, 2, &c.

4. To take out the Logarithm of a Number.

If the Number, whose Logarithm is required, is an integral Number less than 100, against the Number in Page the first you will find its correspondent Number: But if the Number, whose Logarithm is required, consists of three Places of Figures, find its Number on the Lest-Hand of the second or following Pages, and against it, in the Column marked on the Top with 0, you will find the decimal Part of the Logarithm; to which add the proper Index, and you will have the Logarithm required.

proper Index, and you will have the Logarithm required.

If the Number confifts of 4 Places of Figures, find the three first Figures in the Column Number in the second or following Pages, and directly against it, in the Column marked on the Top with the fourth Figure, you will find the decimal Part of

the Logarithm; to which prefix its proper Index.

Thus,

Thus, by Inspection of the Table, it will be found that the decimal Part of the Logarithm of 141 is 1492191; and therefore, as the Index is always one less than the Number of integral Places, the Logarithm of 141 is 2.1492191; of 14.1 is 1.492491; of 1.41

is 0.1492191; of .141 is 1.1492191; of .0141 is 2.1492194,

Also the Logarithm of 1415 is 3.1507564; of 141.5 is 2.1507564; of 14.15 is 1.1507564, &c.

5. To find the Natural-Number corresponding to any given Logarithm.

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As this is only the Reverse of the last Article, it is sufficient to hint, that we have only to look in the Table for the Logarithm, or the nearest to it, and then against it, in the Column marked No. we shall have three Figures of the required Number; and a fourth Figure may be found at the Top of the Table, and the Index will shew how many of these Figures are whole Numbers.

For Example, the Natural-Number corresponding to the Logarithm 0.7583062 is 5.732; to 1.7583062 is 57.32; to 2.7583062 is 573.2; to 3.7583062 is 5732; to 4.7583062 is 57320.

6. In working a direct Proportion or Canon by Logarithms, add the Logarithm of the second and third Terms together, and from the Sum subtract the Logarithm of the first; the Remainder will be the Logarithm of the fourth or required Term.

7. These are the Rules which are absolutely necessary for practical Navigation; but if the young Student is desirous of acquiring a more perfect Knowledge of the Nature of Logarithms, we would advise him carefully to peruse the Essay prefixed to this Volume.

8. TABLE II. Of artificial Sines, to every Quarter of a Point.

In working Plain-Sailing, it is common, in Books of Navigation, to turn the Points of the Course into Degrees, and then by Tables I. and III. to work the Proportion; but it is more expeditiously done, by this Table, without that Reduction: For, against the Point of the Course, you have, by Inspection, the Logarithm of its Sine, or its arithmetical Complement.

9. TABLE III. Containing artificial Sines and Tangents, also the natural Sines, to every Degree and Minute of the Quadrant.

To find the artificial Sine or Tangent, Cofine or Cotangent, of any

If the Arc, whose Log. Sine, &c. is required, be less than 45 Degrees, look for the Degrees on the Top of the Page, and the Minutes on the Column marked M. on the Lest-Hand of the Page, against which, in the proper Column, (see the Title on the Top of the Page,) will be the Logarithm required.

on the Top of the Page,) will be the Logarithm required.

For Example: Let it be required to find the Log. Sine of 5° 41'. In Page 57, against 41 Minutes in the Column Sine, we have the decimal Part of the Log. Sine, 9957681, to which prefixing the Index 8, (see the Top of the Column,) we have 8.9957681, for the required Logarithm.

10. N. B. By putting the Index at the Top of the Column, we are enabled to give feven Places of Decimals; whereas, in Books of this Size, they have hitherto been given only to fix

Places of Decimals.

Number of Degrees greater than 45, find the Degrees at the Bottom of the Page, the Minutes in the Right-Hand Column, marked M. and the Title of the Column, whether Sine, Cofine, &c. at the Bottom of the Page.

12. To take out the Logarithm Sine, &c. to Seconds.

Take out the Log. from the proper Column, both for the next less and next greater Minute, and find their Difference; and then say, by the Rule of Three, or by a Pair of Compasses on a Line of Numbers on the Navigation-Scale, As 60: that Difference: the Number of Seconds given: a sourth Number; which, added to, or subtracted from, the Logarithm of the next less Minute, according as the Logarithms are increasing or decreasing, will give the Logarithm required.

12. Example. What is the Log. Sine of 20° 10' 10"?

The Log. Sine of 20° 10' is 9.5375070 Of 20 11 is 9.5378508

Their Difference 3438

Then fay, on the Navigation-Scale, As 60: 3438:: 10: 573; which, added to 9.5375070, gives 9.537643, the required Log. Sine of 20° 10' 10".

14. To find the Logarithm Sine of an Angle less than 1 Minute.

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Since the Natural-Sines of small Arcs are very nearly proportional to the Arcs themselves, we have, As 60": the Seconds in the Arc whose Sine is required: the Natural-Sine of 1 Minute, or of 60",: the Natural-Sine required. But if this Proportion be worked by Logarithms, it will give the Logarithm Sine required.

15. Example. What is the Log. Sine of 30"?

As 60 its Log. = 1.7781512 conftant

Is to 30 its Log. = 1.4771212

So is the Log. Sine of 1 Minute, its Log. is -- } 6.4637261 constant

7.9408473

To the Log. Sine of je" = 6.1626951

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Here it may be observed, that, to the common Log. of the Seconds in the Arc, whose Log. Sine is required, we are always to add the constant Log. 6.4637261, and subtract the constant Log. 1.7781512; therefore it would be the same Thing only to add the Difference of these Logarithms. Hence this Rule:

16. To the common Log. of the Seconds in the Arc whose Log. Sine is required, add the constant Number 4.6855749; the Sum will be the Log. Sine required.

Hence the above Example may be worked thus :

To the common Log. of 30 = 1.4771212 Add the constant Number 4.6855749

The Sum gives the Log. Sine of 30" = 6.1626961

17. F The Sine of 1 Minute and Tangent of 1 Minute do not fenfibly differ from each other; and, consequently, the Log. Sine of any Arc less than 1 Minute, found by the above Rule, is also the Logarithm Tangent of the same Arc.

18. To find the Log. Secant of any Number of Degrees.

Find the Logarithm-Cosine, and subtract it from 20; the Remainder will be the Logarithmic Secant required.

Example. What is the Logarithmic Secant of 30 Degrees?

From

From - - - 20.00000000 Subtract Log. Cofine of 30° = 9.9375306

Gives Log. Secant of 30° = 10.0624694

19. In like Manner, the Log. Cosecant is found by subtracting the Log. Sine from 20.

Thus. —— From - - 20.0000000 Subtract Log. Sine of 30° = 9.6989700

Gives Log. Cosecant of 30° = 10.3010300

20. Hence it appears, that the Log. Secant and Cosecant may be taken out by Means of the Log. Sines and Cosines, by a mental Subtraction only; and, consequently, as the Secants are but little used, it was not adviseable to give them in the Table, as I could much better fill up the Columns usually allotted for them with the Natural Sines and Cosines; which is now become necessary in Navigation, for finding, in Conjunction with Table IV. the Latitude of a Place, by two Altitudes of the Sun.

21. The Logarithm Secant of an Arc being given, to find the Arc.

Subtract the Logarithm Secant from 20; the Remainder will be the Log. Cofine of the required Arc; and therefore the Arc will be readily found in the Column of Log. Cofines.

Example. What is the Arc corresponding to the Log. Secant of 10.0624694?

From 20.0000000 Subtract 10.0624694

Gives Log. Cofine 9.9375306 This answers in the Table to 30 Degrees, the required Arc.

22. The Log. Cosecant of an Arc being given, to find the Art.

Rule. Subtract the Log. Cosecant from 20, the Remainder will be the Log. Sine of the required Arc.

Example. What is the Arc whose Log. Cosecant is 10.3010300?

From 20.0000000 Subtract 10.3010300

Gives Log. Sine 9.6989700 which in the Table ble is found to be the Sine of 30 Degrees, or the Arc which was required.

To find the Natural Sine.

23. The Numbers expressing the Natural Sine or Cosine are taken out of the Table, in the same Manner as the Log. Sine and Cofine before explained; only, as the Radius is supposed 1, there must be a decimal Point prefixed to the Number found in the Table.

24. Example, The Natural Sine of 30° will be found to be .5,

and its Cofine .8660254.

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25. Any Arc and its Supplement to 180 Degrees have the same Sine, Tangent, and Secant : Hence, if it is required to find the Sine, Tangent, and Secant, of any Number of Degrees greater than 90, we have only to subtract the given Arc from 180 Degrees, and find, by the preceding Rules, the Sine, Tangent, and Secant, of the remaining Arc.

26. To find the Natural Versed Sine of any Number of Degrees.

Find the Natural Cofine; which added to 1, if the Degrees are more than 90, or subtracted from 1,41f they are less than go, the Sum, or Difference, will be the Natural Versed Sine required.

27. Example 1. What is the Natural Versed Sine of 37 Degrees?

The Natural Cofine of 37 Degrees is .7933533, and : the Natural Versed Sign is 1 - .7933533 = .2066467.

28. Example 2. What is the Natural Versed Sine of 143 Degrees?

This, subtracted from 180, gives its Supplement = 37 Degrees; the Natural Cosine of which, by the first Example, is .7933533, and : the Natural Versed Sine of 143 Degrees is 1.7933533.

29. To find the Natural Tangent, or Secant, fee Table V.

30. The Log. Sine, Fangent, or Secant, or Natural Sine of any Arc, being given, to find the Arc itself.

Find, in its proper Column, the Number given, or, if it cannot exactly be found in the Table, the nearest Number to it, and take the Degrees and Minutes corresponding thereto: But if it be required to find the corresponding Arc to Seconds of a Minute, subtract the next lesier Arc from the next greater,

and the Remainder call A: Also find the Difference between the nearest Number in the Table, and the given Number, which call B; and then say, by the Golden Rule, As the Difference A: 60":: B: a Number of Seconds, which, added to, or subtracted from, the Arc corresponding to the nearest Number found in the Table, as the Case may require, will give the required Arc.

31. Example. Let it be required to find the Arc corresponding to the Log. Sine of 9.5375643.

The next Log. Sine in the Table is of 20° 11' = 9.5378508 Of 20 10 = 9.5375070

Their Difference 3438=A.
From Log. Sine given = 9.5375643
Subtract Log. Sine of 20° 10′ = 9.5375070

Difference 573 = B.

Then, by the Golden Rule, (which is readily worked on the Line of Numbers,) As 3438: 60":: 573: 10"; which, added to 20° 10', gives 20° 10' 10", for the required Arc.

32. TABLE IV. For finding the Latitude of a Place by two Altitudes of the Sun, taken both before or both after Noon, or one before and the other after Noon, with the Interval between the Observations taken by a common Watch.

This is readily done by Means of this Table and the Natural Sines given in Table III as we have shewn in the Navigation epitomized, prefixed to this Volume; and therefore, in this Place, we are only to shew how to take out the Numbers.

33. To take out the Log. Half-elapsed Time, or Log. Rising.

Find the Hours on the Top of the Page, and then against the Minutes and Seconds, given in the proper Column, will be the Log. required.

34. If the Log. be required to a Quarter of a Minute, add the next greater and next less together, and Half the Sum will be nearly the Logarithm required.

35. Example. Required the Logarithm Rifing of 2h 101'.

The Log. Rifing of 2h 10' o" is 4.19482 Ditto of 2 10 30 is 4.19806

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Sum 8.39288
The Log. required 4.19644

36. If the Log. be required to fingle Seconds:

Find the Difference of the next greater and next lesser Logarithm, and say, by the Rule of Proportion, As 30": that Difserence: the Number of Seconds (which the given Number exceeds, or is short of, the nearest Time sound in the Table): a sourth Number; which, added to, or subtracted from, the Logarithm of the nearest Half-Minute, as the Case may require, will give nearly the Logarithm required.

37. Example. What is the Log. Half-elapfed Time for 2h 16' 10"?

The Log. $\frac{1}{2}$ elapsed Time of 2h 16' o" = 0.25244 Ditto of 2 16 30 = 0.25104

140

Now, by the Golden Rule, or on the Scale, work this Proportion, viz. As 30": 140:: 10": 47, nearly.

From 0.25244

Subtract, being decreasing, 47

Gives the required Log. = 0.25197

38. To find the Time corresponding to any Log. Middle Time.

Find the Log. or the nearest to it, in the proper Column; then on the Top will be the Hours, and in the Columns M. S. the Minutes and Half-Minutes. But if it is required to find the Time to less than Half-Minutes, find the Time corresponding to the next greater and next lesser Log. and say, As the Difference betwixt these Log.: 30":: the Difference betwixt the Log. whose corresponding Time is required, and the nearest to it in the Table,: a Number of Seconds; which, added to, or subtracted from, the Time corresponding to the nearest Log. found in the Table, will give the required Time.

39. Example. What is the Middle Time corresponding to the Log. 5.04906?

In the Table, the next greater Middle Log. is 5.04999 Next less ditto is 5.04859

Correspond. Time 2 16 30
Ditto 2 16 0

Difference 140

Difference 30

Given Log. 5.04906 Next less Log. 5.04859

Difference 47

Now, by the Rule of Three, or worked on Gunter's Scale, As 140: 30" :: 47: 10".

Then to the nearest Time, 2h 16' o"

Add 10

Gives the Middle Time required 2 16 10

40. TABLE V. A Table of Log. Versed Sines, Natural Tangents, and Secants, to every 10 Minutes.

A Table of Log. Versed Sines being of very little Use in the Practice of Trigonometry and Navigation, and as the like may be said of Natural Tangents and Secants since the Introduction of their Logarithms, it would have been imprudent to have silled up 90 Pages with this Table, when we shall scarce have Room in this Volume for those Tables which are much more useful in Practice. The greatest Use of a Table of Natural Tangents, Secants, &c. is now to construct accurate Scales with; and for this Purpose it is sufficiently copious and accurate, though here comprized in only 8 Pages. However, to supply such as may want, on some particular Occasion, to find the Log. Versed Sine, Natural Tangent, or Secant, to a single Minute, we shall here shew how it may be readily obtained, nearly true, even by this Table; and to a greater Degree of Exactness, if required, by Means of Table III.

41. To find the Natural Tangent, &c.

Find the Degrees and Minutes, if you can, either on the Right or Left Hand of the Page; then against it, in its respective Column, will be the Logarithm Versed Sine, Natural Tangent, or Natural Secant, required. But if the Minutes cannot be exactly found in the Table, take out the Log. Versed Sine, Natural Tangent, or Natural Secant, of the next greater or next less Number of Minutes, and find their Difference; which multiply

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iply by the Number of Minutes by which the given Number exceeds the next greater or next leffer in the Table, and cut off one Figure to the Right-Hand; then will the Figures on the Left be the Quotient (by 10), to be added to, or subtracted from, the nearest Log. Verted Sine, Natural Tangent, or Secant, found in the Table.

42. For Example. What is the Natural Tangent for 30° 3'?

By inspecting the Table, it appears that the Natural Tangent of 30° 10' is - - - - - - .58123
Of 30° 0 is - - - - - - .57735

Their Difference 388 Multiply by 3

And, cutting off the 4, we have 116|4

Add the Proportional Number for 3 Minutes, because the Tangent is increasing - - - - }. 116

The Sum is the Nat. Tangent of 30° 3', nearly = .57851

N. B. The Nat. Tangent to 7 Places of Decimals is .5785144.

43. To find the Natural Tangent of an Arc, to a greater Exactness, by Means of Table III.

Find the Nat. Sine and Nat. Cofine by Table III. then fay, by the Golden Rule, As the Cofine: the Sine:: Radius to the Natural Tangent required.

44. Example. What is the Natural Tangent of 30° 3', the Radius being 1?

By inspecting Table III. it appears that the Natural Tangent of 30° 3' is .5007556, and its Cosine .8655887.

Then, as .8655887: 5007556:: 1: c.5785144, the Tangent which was to be found.

45. To find the Natural Secant of an Arc by Means of Table III.

Say, by the Rule of Proportion, As the Cofine : Radius :: Radius : the Secant.

For Example. What is the Secant of 30° 3'?

As .8655887 : 1 :: 1 : 1.1552830, the required Secant.

46. The Log. Versed Sine may also be found by Table III. with the Assistance of Table I.

Thus: Find the Versed Sine, by Table III. as shewn in the Use of that Table; then find the decimal Part of the Log. required, by Table I. to which prefix its proper Index; viz. if the Arc is 1 Minute, the Index is 2; from 2' to 4' inclusive, the Index is 3; from 5' to 15' is 4; from 16' to 48' is 5; from 49' to 2° 33' is 6; from 2° 34' to 8° 6' is 7; from 8° 7' to 25° 50' is 8; from 25° 51' to any Thing short of 90° is 9; the Log. Versed Sine of 90° being = the Log. Radius, viz. = 10.00000000.

47. Example. What is the Log. Verfed Sine of 600 01?

By Table III. it will be found that the Natural Cosine of 60° is = .5; which, subtracted from the Radius 1, gives .5 = the Natural Versed Sine; the decimal Part of the Logarithm of which, in Table I. is .6989700; to which prefixing its proper Index, as above is directed, we have the Log. Versed Sine required, = 9.6989700.

After having said thus much, it seems unnecessary to give the Reverse of these Problems; we shall therefore proceed to the next

Table.

48. TABLE VI. A Table of Angles of Rhumbs, to turn readily Points of the Compass into Degrees.

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Two Examples will be fufficient to shew the Use of this Table.

49. Example 1. Suppose a Ship sails S. S. W. & W. how many Points, and also how many Degrees, is that from the Meridian?

Against S. S. W. 3 W. we shall find, by inspecting the Table, 23 Points, or 30° 56' 15".

50. Example 2. Suppose a Ship sails N. 45° E. what Point of the Compass is that?

Answer. In the Table, against 45°, we find the Course is N. 4 Points East, that is, N. E.

51. Would Room permit, we might now proceed to shew the several Uses of the Rest of the Tables; but, to explain them fully,

fully, it will be necessary to publish a Treatise of Navigation in another Volume; which we intend to do as soon as possible. In the mean Time, we can only say, that such as have already learnt Navigation understand the Uses of most of them without farther Explanation; and as to those who are now learning, they will be readily explained to them by their respective Masters: We shall therefore, in this Place, only briefly describe the remaining Tables, as follows.

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the em lly, 52. TABLES VII. and VIII. are readily adapted for folving a Traverse, or working a Day's Work, at Sea, and are here printed, with some Improvements; by which the x Latitude and Departure are readily sound, to upwards of 3000 Miles Distance. Their Use is known to all who keep a Journal at Sea.

53. TABLE IX. shews how many Miles make a Degree of Longitude in any Latitude; or how many Miles a Ship must sail, East or West, to alter one Degree in Longitude.

54. TABLE X. is also a Table well known, ealled, a Table of Meridional Parts.

We have given them to Tenths of Miles; but, as this Table is calculated on the Supposition of the Earth's being a Sphere, (whereas its polar Diameter is found to be something shorter than its equatorial, viz. as 265 to 266, is a little flattened towards the Poles, and forms a Figure called an Oblate Spheroid,) it may be objected, by some, that this Table is not strictly true: We have, therefore, at the Bottom of each Page, shewn, what must be subtracted, to reduce the spherical to the spheroidical mericional Parts. However, the common Table is sufficiently exact in Practice.

55. TABLE XI. is a Table of Minutes of Miles of the E-quator, contained in every Degree of the spheroidical Meridian. The Method of using this and the last Table, to find the Course and Distance from one Place to another, in the spheroidical Earth, is as follows.

First, by Table X. find the true meridional Miles for each Latitude, and thence the true meridional Difference of Latitude; then say, As that meridional Difference of Latitude: the Difference of Longitude: Tangent of 45°: the Tangent of the true Course.

Now, by this Table, find the Distance of the Parallel of Latitude of each Place from the Equator, in Miles; and thence the true Difference of Latitude between the two Places, by Addition, if one is North and the other South; or by Sub-

traction, if both North, or both South.

Lastly, say, As the Cosine of the true Course: the true Difference of Latitude:: Radius: the true Distance; which will not differ much from that found in the common Manner.

56. TABLE XII. is the common Table of Amplitudes; shewing, by Inspection, how many Degrees the Sun rises to Northward or Southward of the East, and sets to Northward or

Southward of the West, Points of the Horizon.

- 57. By this Table, the Amplitude found is the true Amplitude, when the Sun is actually in the Horizon; but when the Sun's Center is actually in the Horizon, it is well known that he appears about 37 Minutes above the Horizon at Sea, and therefore the true Amplitude, found by this Table, must increased when the Latitude and Declination are both North or both South, or lessened a certain Number of Minutes when they are of contrary Names, if it is required to find the Amplitude of the Sun at his visible Rising or Setting; and for this Purpose the next Table is inserted, viz.
- 58. TABLE XIII. of the Change of Azimuth, which the Sun makes in rising from the Horizon one Degree of Altitude: Whence, by the Golden Rule, or the Line of Numbers on the Scale, the Change of Azimuth, corresponding to any less Rise of Altitude than one Degree, is easily obtained.
- 59. TABLE XIV. of Ascensional Difference, shews, by Infpection, how many Minutes the Sun rises and sets before or after 6 o'Clock. By which also may be readily found the Length of the Day and Night; as Double the Sun's Setting gives the Length of the Day, and Double the Sun's Rising, the Length of the Night. As the Sun, by the Refraction of the Rays of Light, appears above the Horizon before it is really up, and after it is really set, to obtain the Time of visible Rising and Setting, a few Minutes must be subtracted from the Rising, and added to the Setting, as found in this Table, to have the Time of the San's visible Rising and Setting; and, for this Purpose, we have given
- 60. TABLE XV. of the Time in which the Sun rifes from the Horizon one Degree of Altitude; whence, by Proportion, the Time for any Change of Altitude, less than a Degree, is readily found.
- 61. TABLE XVI. A Table for turning Time and Degrees, &c. mutually into each other.

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Take one Example of its Use, viz. suppose the x Longitude of two Places is 53° 37', what is that in Time?

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x Longitude 53 37
In the Table against 45 0 - - Motion is 3 0 Time.

Remains 8 37 8 30 is - - - - 0 34

Remains 7 Against 7 is - - - - 0 0 28

Remains o Whole Time is 3 34 28

The required x Longitude in Time.

62. TABLE XVII. Of Refraction.

The Rays of Light, passing through the dense Medium of the Atmosphere, are bent in such a Manner as to cause the Sun, Stars, &c. to appear higher than they really are; and therefore, when we have taken the Altitude of the Sun or Star, by a Quadrant, we must look against the Altitude in the Table for the Refraction, to be subtracted to give the true Altitude.

63. TABLE XVIII. Of Depression.

In this Table is seen, by Inspection, the Dip or Depression of the Horizon, corresponding to the Height of the Eye above the Surface of the Sea; to be subtracted from the Altitude in a fore, or added in a back, Observation.

64. TABLE XIX. Of the Sun's Parallax of Altitude.

The Use of this Table is well known to Astronomers; but, as to Navigators, the Error in omitting it is too small to be thought worthy their Notice, as the Sun's Parallax only causes him to appear a few Seconds lower than he really is.

65. TABLE XX. Of the Sun's Semidiameter.

If the Altitude of the Sun's upper Limb be taken by a Quadrant, this Table shews the Number of Minutes and Seconds to be fubtracted, or (if the under Limb was observed) to be added, to obtain the Altitude of the Sun's Center.

66. TABLE XXI. Of Right-Afcension and Equation of Time.

This Table is so contrived, as to shew the Right-Ascension of the Sun, and the Equation of Time, to a sufficient Degree of Exactness for Purposes at Sea, for several Years.

67. TABLE XXII. Of the Sun's Place and Declination.
This Table is also contrived to serve for several Years.

68. TABLE XXIII. To change the Sun's Declination to any Meridian.

If the Mariner is at a confiderable x Longitude from London, and you would have his Declination, which is calculated for London, reduced to the Meridian of the Ship's Place, (which ought always to be done,) it is readily found by this Table.

69. TABLE XXIV. is a Table of the Right-Ascension and Declination of the principal fixed Stars, and will serve the common Purposes of Navigation, for several Years to come.

70. TABLE XXV. For the North-Star.

This Table was constructed by me, in Consequence of a Request in a Letter in the Gazetteer, dated from Deptford, August 10, 1765. Who made the Request, I know not, to this Day. This I think proper to declare, as in his Letter of Thanks to me, in the Gazetteer of the 28th of September, he reslected on some ingenious Astronomers in and near London; which is the true Reason why I did not answer his farther Request in that Paper, that I might not receive any Compliments at the Expence of others.

In finding the Latitude by the North-Star, the Nocturnal has been generally used; but it is now, partly by Time, and partly by being founded on bad Principles, become so faulty, as to cause an Error of near 40 Minutes in the Latitude, in some Circumstances, and therefore cannot be admitted in the

present improved State of Navigation.

71. To be very accurate, Tables should be calculated for different Latitudes; but, as that would be troublesome, and there are better Methods for determining the Latitudes of Places at Sea, I have contented myself with only calculating one Table, in such a Manner as will be found sufficiently accurate for common Purposes, to oblige those who may be inclined to find the Latitude by the North-Star, at any Time of the Night, without waiting for its being exactly on the Meridian.

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72. The Rule, Having taken the Altitude of the Star, and noted the Time of Observation by your Watch, (kept as true as may be,) correct it by Refraction and Dip of the Horizon. This done, the next Thing is to find the Time of the Star's

being on the Meridian above the Pole.

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If the Time of Observation be not more than 6 Hours distant from the Time just sound, (of the Star being on the Meridian above the Pole,) the Distance of Time will, in the Table, give the Degrees and Minutes to be subtracted from the true Altitude of the Star, for the Altitude of the Pole, or Latitude of the Place. But if the Time of Observation be more than 6 Hours distant from the Meridian, it may be observed, that, about 12 Hours before the Star is on the Meridian above the Pole, it was, and, about 12 Hours after, will be again, on the Meridian below the Pole. Then enter the Table with the Distance of the Time of Observation, from the Time of the Star's transiting the Meridian below the Pole, and you will see the Degrees and Minutes to be added to the Latitude required.

N. B. The nearer the Star is to being on the Meridian, the

more accurate will the Latitude be found.

73. Example. Suppose the Altitude of the North-Star was taken at Sea, the 3d of December, at 8 at Night, and found (Refraction and Dip of the Horizon being allowed) to be 52 Deg. 10 Min. what Latitude was the Ship in?

The Right-Ascension of the Star o 46
Add 24 o

Sun's Right-Ascension, subtract 16 39

The Star is on the Meridian above the Pole at 8 7 in the Even.

Time of Observation 8 0

Time distant from the Meridian o 7

Deg. Min.

Hence, from the Altitude of the Star 52 10 N. Subtract, as by the Table, 1 56

Remains the Latitude required 50 14 N.

74. But if the Time of Observation had been 4 o'Clock in the Morning, that Time is more than 6 Hours distant from the Time of transiting the Meridian above the Pole; therefore we must consider, that, as it was on the Meridian above the Pole

at 8 Hours 7 Minutes at Night, it must have been on the Meridian below the Pole about 8 Hours 7 Minutes in the Morning; and therefore, subtracting the Time of Observation, 4 Hours, the Distance of Time from the Meridian below the Pole is 4 Hours 7 Minutes, which, in the Table, gives o Degrees 55 Minutes; which, added to 52 Degrees 10 Minutes, gives the Latitude, 53 Degrees 5 Minutes, North.

This was communicated by me, some Years since, to the Publisher of the Mariner's Calendar; but, in that Book, are some Errors of the Press, both in the Use and Table, which

may be hereby corrected.

75. TABLE XXVI. Of equal Altitudes.

If we take an Altitude of the Sun at any Time in the Forenoon, and observe in the Asternoon when the Sun comes to the same Altitude, the middle Time between the Times of the two Observations will be nearly the Time the Sun was on the Meridian; but not exactly, on Account of the Alteration of his Declination in that Time; and must, therefore, be corrected by the Number of Seconds taken out of this Table, and added to, or subtracted from, the middle Time, as the Table directs.

76. TABLE XXVII. Of the Horizontal Parallax of the Moon.

The Parallax makes the Moon appear lower than it really is; therefore, if we take the Altitude of the Moon by a Quadrant, the Parallax of Altitude, found in this Table, must be added to the Altitude observed, for the true Altitude of the Moon.

N. B. You may allow 16 Minutes for the Semidiameter of the Moon, as you did for the Sun; also the Refraction and Dip, as usual.

77. TABLE XXVIII. Of the Dip, when landlocked.

When the Ship is so near a Shore that an open Horizon cannot be seen, it is necessary to use, in its Stead, the apparent Intersection of the Sea and Land. The Dip, in such Case, must be taken out of this, and not from Table XVIII.

78. TABLE XXIX. Of the Length of Knots.

As it frequently happens, that the Glass, which is used on-Board a Ship, is not above 28", (sometimes not so much,) the Length of the Knots of the Log-Line, instead of being 50 Feet, must be shortened accordingly; which is readily done by inspecting this Table. 8

79. TABLE XXX. Of the Dominical or Sunday Letter, Prime, and Epact. (N. B. The Prime is fometimes called the Golden Number.)

These are so well known as to require no particular Explanation in this Place: Only it may be hinted, that, when it is Leap-Year, you find two Sunday-Letters; for Example, against the Year 1766 is GF. In such Case, the last Letter, F, serves from the Beginning of the Year to the End of February, and the first Letter, G, all the remaining Part of the Year.

80. TABLE XXXI. of the Moon's Southing, and TABLE XXXII. of the Number of Months, are too well known to Mariners, to want any farther Explanation than is given under the Tables, p. 286.

SI. TABLE XXXIII. Of New Moons till the Year 1900.

Against the Golden Number, in the Column of the respective Month, will be the Day of the New Moon required. — For Example: Required the Day of the New Moon for December 1773: Looking in Table XXX. against the Year 1773, you will find the Prime, or Golden Number, for that Year, is 7; against which, in this Table, under the Month December, stands 13; that is, it is New Moon, that Year, the 13th of December. But if the Time is more accurately required, look in Table XXXV.

82. TABLE XXXIV. For finding the Distance of Objects at Sea.

This shews, by Inspection, if the Height of a Ship, Mountain, &c. is known in Feet, how many Miles it is visible at Sea.

83. TABLE XXXV. Of the Moon's Phases. (Calculated by an Affistant.)

This Table is inserted on Account of its great Use in finding the Moon's Age and Time of High-Water, more accurately than can be done by Table XXX. It may be proper to hint, that the Time of any Phase is given in Hours, counted from the next preceding Noon, agreeably to the astronomical Way of counting.

84. TABLE XXXVI. Of the Variation of the Compais, as in the Year 1756.

As these Tables can only be brought forward by making a new Variation-Chart, it is to be wished that the Commissioners of the Longitude would be pleased to cause a new Chart to be made, from proper Observations, as it is a Work of too expen-

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five a Nature for a private Person to persorm: The great Uses fulness of such a Chart is too well known to be here insisted on.

85. TABLE XXXVII. A Tide-Table, shewing the Time of High-Water at New or Full Moon, commonly called the Flowing.

This Table is, for the most Part, extracted from Robertson's Navigation, and must, for Want of good Observations, be very imperfect: But those few Places, which I could give on better Authority, are distinguished by an Asterism (*).

To find the Time of High-Water, the common Method is to add the Flowing to the Time of the Moon's Southing, for the

Time of High-Water.

86. TABLE XXXVIII. Of the Latitudes and Longitudes of Places.

Whoever will compare the first Part of this Table with those in the common Books will find that I have not contented myfelf with copying from any Book, but that I have been at some Pains to collect from the best Charts, correcting them by the best Observations I could procure. As to the Rest of this Table, partly for Want of Time, (it being a Work of considerable Labour and Time,) and partly for Want of good Materials at present, I have been obliged to copy from the common Sea-Books.

87. It is common to hear Masters of Vessels complaining of the Innaccuracy of the Tables of Flowing, and Latitudes and Longitudes of Places, in the Books of Navigation, &c. but I must beg Leave plainly to ask them, where does the Fault lie? certainly not in the Authors so much as in the Masters themselves; for if they will not communicate their Observations, it is impossible the Tables should be correct. I can only say, that if they would communicate their accurate Observations of Latitudes, Tides, &c. Post-paid, I will make the best Use of them, for their Service, that my Time and Opportunity will permit.

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88. It is supposed, that these are all the Tables that will be necessary, and which Room will permit to be given in this Vo-

lume.

Having concluded our Account of the Tables, we shall now give an useful Compendium of Astronomy, for the Sake of those young Students who have already learned the Doctrine of Spherical Triangles.

Compendium of Astronomy:

OR, THE

DOCTRINE of the SPHERE.

N the Figure on the next Page, the Circle hZHn is the Meridian.

hH, the Horizon.

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Zn, the Prime Vertical, or East and West Azimuth-Circle.

NS, the Axis of the Sphere.

N, the North Pole.

S, the South Pole.

EQ: the Equinoctial.

PP, the Axis of the Ecliptic.

Zon, an Azimuth-Circle.

NOS, N#S, Meridians or Hour-Circles.

P*P, a Circle of Longitude for the Sun, Star, or Planet, counted on the Ecliptic.

四四 Tropic of Cancer Fropic of Capricorn 23° 28' from the Equinoctial.

Dod, a Parallel of Declination.

AP, the Arctic or Northern Polar Circle; and

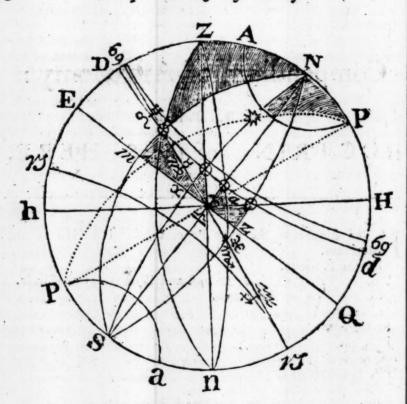
Pa, the Antarctic or Southern Polar Circle; each 23° 28'

from its respective Pole.

In the right-angled spherical Triangle, YOZ, right-angled at Z, the LY is the Complement of Latitude of the Place; ZO the Declination of the Sun, Star, or Planet; TZ its Difference of Ascension; and YO its Amplitude. Any two of these being given, the others may be found, by right-angled Spherical Trigonometry. This forms fix Cases.

In the right-angled spherical Triangle, YOx, right-angled at x, the LY is the Latitude of the Place; xo the Declination of the Sun, Star, or Planet; YO its Altitude when East or West; and Yx the Time from 6 o'Clock when it is East or West. Any two of these being given, the others may be found.

This admits of fix Cases.



In the right-angled Triangle, $\gamma \odot a$, right-angled at a, the $\angle \gamma$ = the Latitude of the Place; $\gamma \odot$ = the Declination of the Sun, Star, or Planet; $a \odot$ = its Altitude at 6 Hours Diftance from the Meridian; and γa = its Azimuth from the East or West. Any two of these being given, the others may be found. This makes 6 Cases.

In the right-angled Triangle, YmO, right-angled at m, the $\angle \Upsilon =$ the Sun's greatest Declination, or the Obliquity of the Ecliptic, 23° 28'; YO the Sun's Longitude from Y or \Rightarrow ; mO the Sun's present Declination; Ym = the Sun's Right-Ascension. Any two of these being given, the others may be found. This admits of 6 Cases. N. B. The Right-Ascension is counted all round from Y, as the Ancients did, and some Moderns do now, count the Longitudes of Places. So that, if the Sun's Place is between Aries and Cancer, the Part, Ym, sound by the Canon, would be the Right-Ascension required; if between Cancer and Libra, then 180° — Ym = the Sun's Right-Ascension. If the Sun is between Libra and Capricorn, then 180° + Ym (found by the Canon) = the Sun's Right-Ascension. Lastly, if the Sun is between Capricorn and Aries.

Aries, then 360° - mm (found by the Canon) = the Sun's

Right-Ascension.

In the oblique spherical Triangle, $\bigcirc ZN$, ZN is the Complement of Latitude of the Place; $Z\bigcirc$ the Complement of Altitude of the Sun or Star; $N\bigcirc$ its Distance from the Pole (which, when the Declination and Latitude of the Place are both of the same Name, that is, both North, or both South, is $= 90^\circ -$ Declination; but when the Latitude of the Place and the Declination are one North and the other South, it is $= 90^\circ +$ the Declination). The $\angle \bigcirc ZN$ is the Azimuth of the Sun or Star (counted from the North in North Latitude, and from the South in South Latitude); and the $\angle ZN\bigcirc$ is the Mour \angle , or Time from Noon, if the Sun; or from the Time of the Star's Southing, if a Star. Any three of these being given, the others may be found, by oblique spherical Triangles. This admits of 10 Cases.

In the oblique spherical Triangle, *NP, NP is the Distance of the Poles of the World and the Ecliptic = 23° 28'; *N the Star's Distance from the Pole of the World, or Complement of the Star's Declination; *P the Complement of the Star's Latitude; the ∠P the Star's Longitude from of the Star's Latitude; the ∠P the Star's Longitude from of the Star's coming on the North Meridian. Any three of these Parts being given, the others may be found, by oblique spherical Triangles. This admits of 10 Cases.

Thus have we, in this very fhort Compendium, shewn the Method of solving 44 Cases in Astronomy, and sufficiently clear to be readily understood by all who have already learned the Doctrine of the Sphere. To adapt it to the Capacity of others, would require a whole Volume: Such an one we may perhaps give, at another Opportunity, if Life, Health, Gr. permit.

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WE had intended to have concluded our Introduction in this Place; but, finding some Room in this Half-Sheet, for the Sake of the young Algebraist, we shall make the following Additions thereto: First,

A COMPENDIUM OF COMPOUND INTEREST.

Let r = the Amount of 1l. in one Year: Thus, if the Rate of Interest is 3l. per Cent. per Annum, then r = 1.03; if 5l. per Cent. it is 1.05; and so for any other Rate.

p = any Sum put to Interest, called the Principal.

n = the Number of Years it is put to Interest.

a = its Amount in n Years.

And let the Capital-Letters stand for the Logarithms of the respective Numbers, denoted by their corresponding little Letters.

Then, Theorem 1. $pr^n = a$, or P + nR = A.

2. Theorem.
$$p = \frac{a}{r^n}$$
, or $A \rightarrow nR = P$.

3. Theorem.
$$r = \frac{1}{p} \frac{1}{\pi}$$
, or $\frac{A-P}{\pi}$.

4. Theorem.
$$n = \frac{A - P}{P}$$

A COMPENDIUM OF THE DOCTRINE OF ANNUI-TIES IN ARREAR, AT COMPOUND INTEREST.

Let a = any Annuity forborn " Years;

m = its Amount;

r = the Amount of 11, in one Year;

Then, Theorem 1.
$$m = \frac{a \times r^n - 1}{r-1}$$

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Or, Log.
$$m = \text{Log. } a + \text{Log. } r^n = 1 - \text{Log. } r = 1$$
.

3. Theorem.
$$n = \text{Log.} \frac{mr - m + a - \text{Log. } a}{\text{Log. } r}$$

4. Theorem.
$$r^{n} - \frac{mr}{a} + \frac{m}{a} - 1 = 0$$
.

The finding of r by this last Theorem being troublesome when n is more than 2, Mr. Simpson has given the following Approximation; which will answer very near the Truth, when the Number of Years is not very great.

Let
$$q = \frac{n \cdot n - 1 \cdot a}{2 \cdot m - na}$$
; then will the Rate per Cent. be =

$$\frac{3000q + 2n - 1.400}{6q.5q + 3n - 4 + \frac{1}{6}. \quad n - 2. \quad 11n - 13}, \text{ nearly.}$$

A COMPENDIUM OF THE DOCTRINE OF ANNU-ITIES, RESPECTING THE PRESENT VALUE, AT COMPOUND INTEREST.

Let a = any Annuity forborn n Years;

r = Amount of 11. in one Year;

p = Amount of 11. In one Year; p = the present Value of the Annuity for n Years,

Theorem 1.
$$p = a \times \frac{1 - \frac{1}{r^n}}{r - 1}$$
.

Or,
$$p = \text{Log. } a + \text{Log. } 1 - \frac{1}{r^n} - \text{Log. } r - 1$$
.

2. Theorem, Log.
$$a = \text{Log. } p + \text{Log. } \overline{r-1} - \text{Log. } 1 - \frac{1}{r^n}$$
.

3. Theorem.
$$n = \frac{\text{Log. } a - \text{Log. } a + p - pr}{\text{Log. } r}$$

8

4. Theorem.
$$r^{n+1} - \frac{a}{p} + 1 \times r^n + \frac{a}{p} = 0$$
.

The finding r, in this last Theorem, being troublesome when n is more than 1, Mr. Simpson has given the following

Approximation; viz. assume $q = \frac{n \cdot n + 1 \cdot a}{2na-2p}$; then will

 $\frac{3000q - 2n + 1 \times 400}{6q \cdot 5q - 3n - 4 + \frac{2}{6} \cdot n + 2 \cdot 11n + 13} \Rightarrow \text{ the Rate per Cent, very nearly, when n is not a very large Number.}$

A COMPENDIUM OF THE ADDITION AND SUBTRACTION OF SINES AND TANGENTS, &c.

Of great Use in the Application of Algebra to Trigonometry.

First, of Sines.

PROBLEM 1. To find the Sine corresponding to the Sum of any two Arcs or Angles: Radius being taken = 1.

Theorem. The Sine of the greater into the Cofine of the less, plus the Sine of the lesser into the Cofine of the greater.

PROBLEM 2. To find the Cofine corresponding to the Sum of any two Arcs or Angles.

Theorem. The Product of the two Cofines, minus the Product of the two Sines.

PROBLEM 3. To find the Sine corresponding to the Difference of two Arcs or Angles.

Theorem. The Sine of the greater into the Cofine of the less, minus the Sine of the lesser into the Cosine of the greater.

PROBLEM 4. To find the Cofine corresponding to the Difference of two Arcs or Angles.

Theorem. The Product of the two Cofines, plus the Product of the two Sines.

Note. When any Angle is more than 90 Degrees, its Cofine is a negative Quantity,

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OF ADDING AND SUBTRACTING TANGENTS.

Let T = the Tangent of an Arc, and t = the Tangent of a leffer Arc.

Then,
$$\frac{T+t}{1-Tt}$$
 = Tangent of the Sum of the faid Arcs;

And
$$\frac{t-Tt}{T+t}$$
 = Cotangent of their Sum.

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Also
$$\frac{T-t}{1+Tt}$$
 = Tangent of their Difference;

And
$$\frac{1+T_f}{T-t}$$
 = Cotangent of their Difference.

These Theorems are when both Arches are acute; but when any Arc is above 90°, its Tangent must be represented by a negative Quantity: For Example, when T is the Tangent of an Arc greater than 90°, then, by writing — T, for T, in the

above Expression, the Tangent of the Sum is
$$=\frac{-T+t}{1-t\times -T}=\frac{-T+t}{1-t\times -T}$$

Let t represent the Tangent of an Arc; x and y the Sine and Cosine of Double that Arc; then will $x = \frac{2t}{1+t^2}$; and $y = \frac{2t}{1+t^2}$

$$\frac{1-t}{1+t^2}$$
, the Sine and Cofine of Double the Arc of which t is

the Tangent; and
$$\frac{x}{y} = \frac{2t}{1-t^2}$$
, and $\frac{y}{x} = \frac{1-t^2}{2t}$, the

Tangent and Cotangent of Double the Arc of which t is the

If x represents the Sine of an Arc, and y its Cofine, then $x^2 + y^2 = 1$. Hence, $x^2 = 1 - y^2$, or $y^2 = 1 - x^2$. And

as
$$y: 1:: 1: \frac{1}{y}$$
 = the Secant of the Arc whose Cofine is y.

Again, as $x : 1 :: 1 : \frac{1}{x} =$ the Cofecant of the Arc whose Sine is x.

Solution of Spherical Problems.

The following Theorem is of great Use in solving Spherical Problems algebraically.

Put c and d = the Sine and Cofine of any Side of a spherical Triangle; c and f the Sine and Cofine of any other Side; and put m = the Sine of their contained Angle, and b = the Cofine of their other Side. Then df + cem = b.

Note, when any Arc is obtuse, its Cosine must be represented by a negative Quantity.

THE END OF THE INTRODUCTION.

hefe Theorems are when both Ardets are neute; but when a life is above one, its Tangent when he reprofessed here you've Classical a for Example, when T is the Tangets of Langets of the greater that are, then, by writing - T, for Figure the

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TABLE

OF

LOGARITHMS:

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For Numbers increasing orderly from 1 to 10000, with their Differences:

Whereby the Logarithms of much larger Numbers may be readily found.

200			OTABLE				
Nº.	Log.	Nº.	Log.	Nº.	Log.	N.	Log.
1	0.0000000	26	1.4149733	51	1.7075702	76	1.8808136
2	0.3010300	27	1.4313637	52	1.7160033	77	1.8864907
3	0.4771212	28	1.4471580	53	1.7242759	78	1.8920946
4	0.6020600	29	1.4623980	54	1.7323937	79	1.8976271
5	0.6989700	30	1.4771212	55	1.7403627	80	1.9030900
6	0.7781512	31	1.4913617	56	1.7481880	81	1.9084850
1 7	0.8450980	32	1.5051500	57	1.7558748	82	1.9138138
8		33	1.5185139	58	1.7634280	83	1.9190781
9	0.9542425	34	1.5314789	59	1.7708520	84	1.9242793
10	1.0000000	35	1.5440680	60	1.7781512	85	1.9294189
11	1.0413927	36	1 5563025	61	1.7853298	86	1.9344984
12		37	1.5682017	62	1.7923917	87	1.9395192
13	1.1139433	38	1.5797836	63	1.7993405	88	1.9444827
114	1.1461280	39	1.5910646		1.8061800	89	1.9493900
15	1.1760912	40	1.6020600	65	1.8129133	90	1.9542425
16	1.2041200	41	1.6127838	66	1.8195439	91	1.9590414
17			1.6232493	67	1.8260748	92	1.9637878
18	1.2552725	143			1.8325089	93	1.9684829
19	1.2787536	44		69	1.8388491	94	1.9731278
20	1.3010300	45	1.6532125	70	1.8450980	95	1.9777236
21	1.3222193	46		71	1.8512583	96	1.9822712
22					1.8573325	97	1.9867717
23			1.6812412	73	1.8633229	98	1.9912261
24	1.3802112	149			1.8692317	99	1.9956352
25	11.3979400	150	1.6989 00	175	1.8750613	100	2.9000000

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Nº.	0	1.		3	4
100	0000000	0004341	0008677	0013009	0017337
101	0043214	0047511	0051805	0056094	0060379
102	0085002	0090257	0094509	0141003	0102999
103	0170333	0132587	0178677	0182843	0145205
101	0211893	0216027	0220157	0224284	0228406
105					
106	0253059	0257154	0261245	0265333	0269416
107	0293838	0297895	0301948	0305997	0310043
	0334237	0378247	0382226	0386202	0350293
109	0374265	0417873	0421816	0425755	0390173
110	0413927	0457140	0461048	0464952	0468852
111	0453230				
112	0492180	0496056	0499928	0503797	0507663
113	0530784	0534626	0538464	0542299	0546130
114	0569048	0572856	0576661	0580462	0584260
115	0606978	0610753	0614525	0618293	0622058
	0644580	0685569	0689276	0692980	0659530
117					
118	0718820	0722499	0726175	0729847	0733517
119	0755470	0759118	0762762	0766404	0770043
120	0791812	0795430	0799045	0802656	0806265
121	0827854	0831441	0835026	0838608	0842187
122	0863598	0867157	0870712	0874264	0877814
123	0899051	-	0906107	0909631	0913151
124	0934217	0937718	0941216	0944711	0948204
125	0969100	0972573	0976013	0979511	0982975
126	1003705	1007151	1010593	1014033	1017471
127	1038037	1041455	1044871	1048284	1051694
128	1072100	1075491	1078880	1115985	1085650
129	1105897				1119343
130	1139433	1142773	1146110	1149444	1152776
131	1172713	1176027	1179338	1182647	1185954
132	1205739	1209028	1212314	1215598	1218880
133	1238516	1241780	1245042	1248301	1251558
134	1271048	1274288	1277525	1280760	1283993
135	1303338	1206553	1309767	1312978	1316187
136	1335389	1338581	1341771	1344958	1348144
137	1367206	1370374	1373541	1376705	1379867
138	1398791	1401937	1405080	1408222	1411361
139	1430148	1433271	1436392	1439511	1442628
140	1461280	1464381	1467480	1470577	1473671
141	1492191	1495270	1498347	1501422	1504494

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0021661	0025980	0030295	0034605	0038912	4324
0064660	0058937	0073209	0077478	0081742	4281
0107239	0111473	0115704	0119931	0124154	4240
0149403	0153597	0157787	0161973	0166155	4198
0191163	0195317	0199467	0203613	0207755	4158
0232524	0236639	0240750	0244857	0248960	4118
0273496	0277572	0281644	0285712	0289777	4080
0314085	0318123	0322157	0326188	0330214	4042
0354297	0358298	0362295	0366289	0370279	4004
0394141	0398105	0402066	0406023	0409977	3968
0433623	0437551	0441476	0445398	0449315	3932
0472749	0476642	0480532	0484418	0488301	3897
0511525	0515384	0519239	0523091	0526939	3862
0549958	0553783	0557605	0561423	0565237	3828
0588055	0591846	0595634	0599419	0603200	3795
0625820	0629578	0633334	0637085	0640834	3762
0663259	0666985	0670708	0674428	0678145	3729
0700379	0704073	0707765	0711453	0715138	3698
0737183	0740847	0744507	0748164	0751818	3666
0773679	0777312	0780941	0784568	0788192	3636
0809870	0813473	0817073	0820669	0824263	3605
0845763	0849336	0852906	0856473	0860037	3576
0881361	0884905	0888446	0891984	0895519	3547 3518
0916669	0920185	0923696	0927206		
0951693	0955180	0958664	0962146	0965624	3489
0986437	0989896	0993353	0996806	1000257	3462
1020905	1024337	1027766	1031192	1034616	3434
1055102	1058506	1061909	1065308	1102529	3381
1089031	1126050	1095785	1132746	1136091	3355
		1129400			
1156105	1159432	1162756	1166077	1169396	3329
1189257	1192559	1195858	1199154	1235250	3279
1222159	1225435		1264561	1267806	3255
1254813	1258064	1261314	1296899	1300119	3230
1319393	1322597	1325798	1328998	1332194	3204
			1360861	1364034	3182
1351326	1354507	1357685	1392492	1395643	3160
1414498	1417632	1420765	1423895	1427022	3137
1445742	1448854	1451964	1455072	1458177	3114
1476763	1479853	1482941	1486026	1489110	3092
1507564		1513698	1516762	1519824	3070
	, , , ,	, , ,		-	

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No.	0	1	2	3	1 4
142	1522883	1525941	1528996	1532049	1535100
143	1553360	1556396	1559430	1562462	1565491
144	1583625	1586640	1589653	1592663	1595672
145	1613680	1616674	1619666	1622656	1625644
146	1643528	1646502	1649474	1652443	1655411
147	1673173	1676127	1679078	1682027	1684975
148	1702617	1705550	1708482	1711411-	1714339
149	1731863	1734776	1737688	1740598	1743506
150	1760913	1763807	1766699	1769590	1772478
151	1789769	1792645	1795518	1798389	1801259
152	1818436	1821292	1824146	1826999	1829850
153	1846914	1849752	1852588	1855421	1858253
154	1875207	1878026	1880844	1883659	1886473
155	1903317	1906118	1908917	1911714	1914510
156	1931246	1934029	1936810	1939590	1942367
157	1958996	1961762	1964525	1967287	1970047
158	1986571	1989319	1992065	1994809	1997552
159	2013971	2016702	2019431	2022158	2024883
160	2041200	2043913	2046625	2049335	2052044
161	2068259	2070955	2073650	2076344	2079035
162	2095150	2097830	2100508	2103185	2105860
163	2121876	2124540	2127201	2129862	2132521
164	2148438	2151086	2153732	2156376	2159018
165	2174839	2177471	2180100	2182728	2185355
166	2201081	2203696	2206310	2208922	2211533
167	2227165	2229764	2232363	2234959	2237554
168	2253093	2255677	2258260	2260841	2263421
169	2278867	2281436	2284003	2286570	2289134
170	2304489	2307043	2309596	2312146	2314696
171	2329961	2332500	2335038	2337574	2340108
172	2355284	2357809	2360331	2362853	2365373
173	2380461	2382971	2385479	2387986	2390491
174	2405492	2407988	2410481	2412974	2415465
175	2430380	2432861	2435341	2437819	2440296
176	2455127	2457593	2460059	2462523	2464986
177	2479733	2482186	2484637	2487087	2489536
178	2504200	2506639	2509077	2511513	2413948
179	2528530	2530956	2533380	2535803	2538224
180	2552725	2555137	2557548	2559957	2562365
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235	3710679	3712526	3714373	3716219	3718065
236	3729120	3730960	3732799	3734637	3736475
237	3747483	3749316	3751147	3752977	3754807
238	3765769	3767594	3769418	3771240	3773062
239	3783979	3785796	3787612	3789427	3791241
240	3802112	3803922	3805730	3807538	3809345
241	3820170	3821972	3823773	3825573	3827373
242	3838154	3839948	3841741	3843534	3845326
243	3856063	3857850	3859636	3861421	3863206
244	3873898	3875678	3877457	3879235	3881012
245	3891661	3893433	3895205	3896975	3898746
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247	3926969	3928727	3930485	3932241	3933997
. 248	3944517	3946268	3948018	3949767	3951516
249	3961993	3963737	3965480	3967223	3968964
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251	3996737	3998467	4000196	4001925	4003653
252	4014005	4015728	4017451	4019172	4020893
253	4031205	4032921	4034637	4036352	4038066
254	4048337	4050047	4051755	4053464	4055171
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257	4099331	4101021	4102710	4104398	4106085
258	4116197	4117880	4119562	4121244	4122925
259	4132998	4134674	4136350	4138025	4139700
260	4149733	4151404	4153073	4154742	4156410
261	4166405	4168069	4169732	4171394	4173056
262	4183013	4184670	4186327	4187983	4189638
263	4199557	4201208	4202859	4204509	
264	4216039	4217684			
265	4232459		4235735	4237372	
	4248816				
267	4265113	4266739	1 4268365	1 4269990	1 427 1614

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3550682	3552599	3554515	3556430	3558345	1918
3569813	3571723	3573630	3575537	3577443	1908
3588862	3590762	3592662	3594560	3596458	1901
3607827	3609719	3611610	3613500	3615390	1893
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3645510	3647386	3649260	3651134	3653007	1877
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3701428	3703280	3705131	3706981	3708830	1852
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3738311	3740147	3741983	3743817	3745651	1836
3756636	3758464	3760292	3762118	3763944	1829
3774884	3776704	3778524	3780343	3782161	1822
3793055	3794868	3796680	3798492	3800302	1814
3811151	3812956	3814761	3816565	3818368	1806
3829171	3830969	3832766	3834563	3836359	1798
3847117	3848908	3850698	3852487	3854275	1791
3864990	3866773	3868555	3870337	3872118	1784
3882789	3884565	3886340	3888114	3889888	1774
3900515	3902284	3904052	3905819	3907585	1769
3918169	3919931	3921691	3923452	3925211	1762
3935752	3937506	3939260	3941013	3942765	1755
3953264	3955011	3956758	3958504	3960249	1748
3970705	3972446	3974185	3975924	3977662	1741
3988077	3989811	3991543	3993275	3995007	1734
4005380	4007106	4008832	4010557	4012282	1727
4022614	4024333	4026052	4027771	4029488	1721
4039780	4041492	4043205	4044916	4046627	1714
4056878	4058584	4060289	4061994	4053698	1707
4073909	4075608	4077307	4079005	4080703	1700
4090874	4092507	4094259	4095950	4097641	1694
4107772	4109459	4111144	4112829	4114513	1687
4124605	4126285	4127964	4129643	4131320	1674
4141374	4143047	4144719	4146391	4148063	1667
4158077	4159744	4161410	4163076	4181355	1661
41747.7	4176377	4178037	4179696	-	
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4207806	4209454	4211101	4212748	4214394	1643
4224257	4225898	4227539	4229180	4230820	1636
4240645	4242281	4243915	4245550	4263486	1530
4256972 4273238	4258601	4260230	4261858	4279727	1624
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269	26	58	4281348	4282968	4284588	4286207	4287825
270		- 1	4297523				4303976
271		-	4313638				4320067
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273			4345689			4350476	4352071
274			4361626			4366396	4367985
275	1	_	4377506				4383841
276	27	75	4393327	4394906			4399639
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278							4431065
279	27	78			4443571		4446692
281	27	79	4456042	4457598		4460709	4462204
281	2	80	4471580	4473131		4476231	4477780
282	28	81					4493241
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287				4565179		4568213	4569731
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299 4756712 4758164 4759616 4761067 4762518 300 4771212 4772660 4774107 4775553 4776999 301 4785665 4787108 4788550 4789991 4791432 302 4800069 4801507 4802945 4804381 4805818 303 4814426 4815859 4817292 4818724 4820156 304 4828730 4830164 4831592 4833019 4834446 305 4842998 4844422 4845845 4847268 4848690 306 4857214 4858633 4860052 4861470 4862888 307 4871384 4872798 4874212 4875026 4877039 308 4885507 4886917 4888326 4889735 489144	-		4742163	4743620			4747988
300 4771212 4772660 4774107 4775553 4776999 301 4785665 4787108 4788550 4789991 4791432 302 4800069 4801507 4802945 4804381 4805818 303 4814426 4815859 4817292 4818724 4820156 304 4828730 4830164 4831592 4833019 4834446 305 4842998 4844422 4845845 4847268 4848690 306 4857214 4858633 4860052 4861470 4862888 307 4871384 4872798 4874212 4875026 4877039 308 4885507 4886917 4888326 4889735 489144			4756712	4758164	4759616		4762518
301 4785665 4787108 4788550 4789991 4791432 302 4800069 4801507 4802945 4804381 4805818 303 4814426 4815859 4817292 4818724 4820156 304 4828730 4830164 4831592 4833019 4834446 305 4842998 4844422 4845845 4847268 4848690 306 4857214 4858633 4860052 4861470 4862888 307 4871384 4872798 4874212 4875026 4877039 308 4885507 4886917 4888326 4889735 489144			4771212	4772660	4774107		4776999
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	3	08	4885507	4886917		4889735	4891144
			4899585			4903799	4905203

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١	4289443	4291060	4292677	4294293	4295908	1618
۱	4305588	4307199	4308809	4310419	4312029	1612
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١	4337698	4339298	4340896	4342494	4344092	1600
ı	4353665	4355258	4356851	4358444	4360035	1594
ı	4369573	4371161	4372748	4374334	4375920	1588
I	4385423	4387005	4388587	4390167	4391747	1582
ı	4401216	4402792	4404368	4405943	4407517	1577
i	4416951	4418522	4420092	4421661	4423229	1571
ľ	4432630	4434195	4435759	4437322	4438885	1565
ľ	4448252	4449811	4451370	4452928	4454485	1560
l	4463818	4465372	4466925	4468477	4470029	1554
ı	4479329	4480877	4482424	4483971	4485517	1549
ı	4494784	4496326	4497868	4499410	4500951	1543
ı	4510184	4511721	4513258	4514794	4516329	1537
١	4525531	4527062	4528593	4530124	4531654	1533
ı	4540823	4542349	4543875	4545400	4546924	1527
ı	4556061	4557582	4559102	4560622	4562142	1521
ı	4571246	4572762	4574277	4575791	4577305	1515
ľ	4586378	4587889	4589399	4590908	4592417	1510
ı	4601458	4602963	4604468	4605972	4607475	1505
ı	4616486	4617986	4619485	4620984	4622482	1501
ı	4631461	4632956	4634450	4635944	4637437	1495
ı	4646386	4647875	4649364	4650853	4652341	1491
ı	4661259	4662743	4664227	4665711	4667194	1485
ı	4676081	4677560	4679039	4680518	4681996	1480
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	4705575	4707044	4708513	4709982	4711450	1470
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	4892552	4893959	4895366	4896773	4898179	1408
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375	5740313	5741471	5742628	5743786	5744943
376	5751878	5753033	5754188	5755342	5756496
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382	5820634	5821770	5822907	5824043	5825179
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385	5854607	5855735	5856863	5857990	5859117
386	5865873	5866998	5868123	5869247	5870371
387	5877110	5878232	5879353	5880475	5881596
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	6379898	6380897	6381896	6382895	6383894	1000
	6389882	6390879	6391876	6392872	6393869	998
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442	6454223	6455205	6456187	6457169	6458151
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463	6655810	6656748	6657685	6658623	665956
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474	6757783	6759700	6759615	6760531	676144
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509	7067178	7068031	7068884	7069737	7070589
510	7075702	7076553	7077405	7078256	7079107
511	7084209	7085059	7085908	7086758	7087607
512	7092700		7094396	7095244	7096091
513	7101174	7102020	7102866	7103713	7104559
514	7109631	7110476	7111321	7112165	7113010
515	7118072	7118915	7119759	7120601	7121444
516	7126497	7127339	7128180		7129862
517	7134905		7136585	7137425	7138264
518	7143298		7144974	7145812	7146650
519	7151674	7.152510	17153347	7154183	1.7155019

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6798819	6799727	6800634	6801541	6802448	908
6807886	680879z	6809697	6810602	6811507	906
6816934	6817838	6818741	6819645	6820548	904
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6834973	6835873	6836773	6837673	6838572	900
6843965	6844863	6845761	6846659	6847556	899
6852938	6853834	6854730	6855026	6856522	8.97
6861892	6862787	6863681	6864575	6865469	894
6870828	6871721	6872613	6873506	6874398	892
6879746	6880637	6881528	6882418	6883308	891
6888646	6889535	6890423	6891312	6892200	889
6897527	6898414	6899301	6900188	6901074	887
6906390	6907275	6908161	6909046	6909930	885
6915235	6916119	6917002	6917885	6918768	883
6924062	6924944	6425826	6926707	6927588	882
6932872	6933752	6934631	6935511	6936390	881
6941663	6942541	6943419	6944297	6945174	878
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6959193	6960067	6960942	6961816	6962690	875
6967931	6968804	6969676	6970549	6971421	873
6976652	6977523	6978394	6979264	6980135	872
6985355	6986224	6987093	6987963	6988831	870
6994041	6994908	6995776	6996643	6997510	868
7002709	7003575	7001441	7005303	7006172	866
7011361	7012225	7013089	701 3953	7014816	865
7019995	7020857	7021719	7022582	7023444	863
7028612	7029472	7030333	7031193	7032054	861
7037212	7038071	7038929	7039788	7040647	860
7045794	7046652	7047507	7048366	7049223	857
7054360	7055216	7056072	7056927	7057782	855
7062910	7063764	7064617	7065471	7066324	854
7071442	7072294	7073146	7073998	7074850	853
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7096939	7089305	7090154	7091003	7091851	840
7105404	7097786	7098633	7107941	7100327	848
7113854		-			
7122287	7114698	7115542	7.116385	7117229	844
7130703	7123129	7123971	7124813	7125655	843
7139104	7131544	7132385	7133225	7134065	841 840
7147488	7148325	7149162	7150000	7150837	838
7155856	7156691	7157527	7158363	7159198	837
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523	7185017	7185847	7186677	7187507	7188337
524	7193313	7194142	7194970	7195799	7196627
525	7201591	7202420	7203247	7204074	7204901
526	7209857	7210683	7211508	7212334	7213159
527	7218106	7218930	7219754	7220578	7221401
528	7226339	7227162	7227984	7228806	7229628
529	7234557	7235378	7236198	7237019	7237839
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531	7250945	7251763	7252581	7253398	7254215
532	7259116	7259933	7260749	7261565	7262380
533	7267272	7268087	7268901	7269716	7270531
534	7275413	7276226	7277039	7277852	7278664
535	7283538	7284349	7285161	7285972	7286784
536	7291648	7292458	7293268	7294078	7294888
537	7299743	7300551	7301360	7302168	7392977
538	7307823	7308630	7309437	7310244	7311051
539	7315888	7316693	7317499	7318304	7319109
540	7323938	7324742	7325546	7326350	7327153
541	7331973	7332775	7333578	7334380	7335182
542	7339993	7340794	7341595	7342396	7343197
543	7347998	7348798	7349598	7350397	7351196
544	7355989	7356787	7357585	7,358383	7359181
545	7363965	7364762	7365558	7366355	7367151
546	7371926	7372722	7373517	7374312	7375107
547	7379873	7380667	7381461	7382254	7383048
548	7387806	7388598	7389390	7390182	7390974
549	7395723	7396514	7397305	7398096	7398886
550	7403627	7404416	7405206	7405995	7406784
551	7411516	7412304	7413092	7413880	7414668
552	7419391	7420177	7420964	7421750	7422537
553	7427251	7428037	7428822	7429607	7430392
554	7435098	7435881	7436665	7437449	7438232
555	7442930	7443712	7444495	7445277	7446059
556	7450748	7451529	7452310	7453091	7453871
557	7458552	7459332	7460111	7460890	7461670
558	7466342	7467120	7467898	7468676	7469454
559	7474118	7474895	7475672	7476448	7477225
560	7481880	7482656	7483431	7484206	7484981
561	7489629	7490403	7491177	7491950	7492724

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7180863 7181694 7182525 7183356 7184186	831
7189167 7189996 7190826 7191655 7192484	830
7107455 7198283 7199111 7199938 7200700	828
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7213984 7214809 7215633 7216458 7217282	825
7222225 7223048 7223871 7224094 7225517	824
7230450 7231272 7232093 7232914 7233736	822
7238660 7239480 7246300 7241120 7241939	821
7246854 7247672 7248491 7249309 7250127	819
7255033 7255850 7256667 7257483 7258300	818
7263196 7264012 7264827 7265642 7266457	816
7271344 7272158 7272972 7273786 7274599	814
7279477 7280290 7281101 7281914 7282726	813
7287595 7288406 7289216 7290027 7290838	811
7295697 7296507 7297316 7298125 7298934	809
7303785 7304593 7305400 7306308 7307015	808
7311857 7312663 7313470 7314276 7315082	806
7319914 7320719 7321524 7322329 7323133	805
7327957 7328760 7329564 7330367 7331170	804
7335985 7336787 7337588 7338390 7339191	803
7343997 7344798 7345598 7346398 7347198	800
7351995 7352794 7353593 7354392 7355191	799
7359979 7360776 7361574 7362371 7363168	798
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[7375902 7376696 7377491 7378285 7379079	795
7383841 7384634 7385427 7386220 7387013	793
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7415455 7416243 7417030 7417817 7418604	787
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	784
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7470232 7471009 7471787 7472564 7473341	778
7478001 7478777 7479553 7480329 7481105	776
7485756 7486531 7487306 7488080 7488854	775
7493498 7494271 7495044 7495817 7496590	774

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562	7497363	7498136	7498908	7499681	7500453
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564	7512791	7513561	7514331	7515100	7515870
565	7520484	7521253	7522022	7522790	7523558
566	7528164	7528932	7529699	7530466	7531232
567	7535831	7536596	7537362	7538128	7538893
568	7543483	7544248	7545012	7545777	7546541
569	7551123	7551886	7552649	7553412	7554175
570	7558749	7559510	7560272	7561034	7561795
571	7566361	7567122	7567882	7568642	7569402
572	7573960	7574719	7575479	7576237	7576996
. 573	7581546	7582304	7583062	7583819	7584577
574	7589119	7589875	7590632	7591388	7592144
575	7596678	7597434	7598189	7598944	7599699
576	7604225	7604979	7605733	7606486	7607240
577	7611758	7612511	7613263	7614016	7614768
578	7619278	7620030	7620781	7621532	7622283
579	7626786	7627536	7628286	7629035	7629785
580	7634280	7635029	7635777	7636526	7637274
581	7641761	7642509	7643256	7644003	7644750
582	7649230	7649976	7650722	7651468	7652214
583	7656686	7657430	7658175	7658920	7659664
584	7664128	7664872	7665616	7666359	7667102
585	7671559	7672391	7673043	7673785	7674527
586	7678976	7679717	7680458	7681199	7681940
587	7686381	7687121	7687860	7688600	7689339
588	7693773	7694512	7695250	7695988	7696727
589	7701153	7701890	7702627	7703364	7704101
590	7708520	7709256	-7709992	7710728	7711463
591	7715875	7716610	7717344	7718079	7718813
592	7723217	7723951	7724684	7725417	7726150
593	7730547	7731279	7732011	7732743	7733475
594	7737864	7738596	7739326	7740057	7740788
595	7745170	7745899	7746629	7747359	7748088
596	7752463	7753191	7753920	7754648	7755376
597	7759743	7760471	7761198	7761925	7762652
598	7767012	7767738	7768464	7769190	7769916
599	7774268	7774993	7775718	7776443	7777167
600	7781513	7782236	7782960	7783683	7784407
601	7788745	7789467	7790190	7790912	7791634
602	7795965	7796686	7797408	7798129	7798850 7806053
603	7803173	7803893	7804613	7805333	7800055
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7501225	7501997	7502769	7503541	7504312	772
7508939	7509710	7510480	7511251	7512021	771
7516639	7517409	7518178	7518947	7519716	769
7524326	7525094	7525862	7526629	7527397	768
7531999	7532766	7533532	7534298	7535065	767
7539659	7540424	7541189	7541954	7542719	766
7547305	7548069	7548832	7549596	7559359	764
7554937	7555700	7556462	7557224	7557987	762
7562556	7563318	7564079	7564840	75.65600	761
7570162	7570922	7571682	7572441	7573201	760
7577755	7578513	7579272	7580030	7580788	759
7585334	7586091	7586848	7587605	7588362	757
7592900	7593656	7594412	7595168	7595923	756
7600453	7601208	7601962	7602717	7603471	755
7607993	7608746	7609500	7610253	7611005	753
7615520	7616272	7617024	7617775	7618527	752
7623034	7623784	7624535	7625285	7626035	751
7630534	7631284	7632033	7632782	7633531	749
7638022	7638770	7639518	7640266	7641014	748
7645497	7646244	7646991	7647737	7648484	747
7652959	7653705	7654450	7655195	7655941	745
7660409	7661153	7661897	7002041	7663385	744
7667845	7668588	7669331	7670074	7670816	743
7675269	7676011	7676752	7677494	7678235	742
7682680	7683421	7684161	7684901	7685641	741
7690079	7690818	7591557	7692296	7693035	740
7697465	7698203	7698940	7699678	7700416	738
7704838	7795575	7706311	7707048	7707784	737
7712199	7712934	7713670	7714405	7715140	736
7719547	7720282	7721016	7721750	7722483	734
7726884	7727616	7728349	7729082	7729814	733
7734207	7734939	7735670	7736402	7737133	732
7741519	7742249	7742979	7743710	7744449	731
7748818	7749547	7750276	7751005	7751734	730
7756104	7756832	7757560	7758288	7759016	728
7763379	7764106	7757560	7765559	7766286	727
7770642	7771367	777209	7772818	7773543	726
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7792356	7793078	7793800	7794522	7795243	722
7799571	7800291	7801012	7801732	7802453	721
7806773	7807492	7808212	7808931	7809650	720

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17.3.

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606	7824726	7825443	7826159	7826876	7827592
607	7831887	7832602	7833318	7834033	7834748
608	7839036	783975	7840464	7841178	7841892
609	7846173	7846886	7847599	7848312	7849024
610	7853298	7854010	7854722	7855434	7856145
611	7860412	7861123	7861833	7862544	7863254
612	7867514	7868224	7868933	7869643	7870352
613	7874605	7875313	7876021	7876730	7877438
614	7881684	7882391	7883098	7883805	7884512
615	7888751	7889457	7890163	7890869	7891575
616	7895807	7896512	7897217	7897922	7898626
617	7902852	7903555	7904259	7904963	7905666
618	7909885	7910587	7911290	7911992	7912695
619	7916906	7917608	7918309	7919011	7919712
620	7923917	7924617	7925318	7926018	7926718
621	7930916	7931615	7932314	7933014	7933712
622	7937904	7938602	7939300	7939998	7940696
623	7944880	7945578	7946274	7946971	7947668
624	7951846	7952542	7953238	7953933	7954620
625	7958800	7959495	7960196	7960884	7961578
626	7965743	7966437	7967131	7967824	7968517
627	7972675	7973368	7974060	7974753	7975445
628	7979596	7980288	7980979	7981671	7982362
629	7986506	7987197	7987887	7988577	7989267
630	7993405	7994095	7994784	7995473	7996162
631	8000294	8000982	8001670	8002358	8003046
632	8007171	8007858	8008545	8009232	8009919
633	8014037	8014723	8015409	8016095	8016781
634	8020893	8021578	8022262	8022947	8023632
635	8027737	8028421	8029105	8029789	8030472
636	8034571	8035254	8035937	8036619	8037302
637	8041394	8042076	8042758	8043439	8044121
638	8048207	8048887	8049568	8050248	8050929
639	8055009			8057047	8057726
640	8061800		8063157	8063835	8064513
641	8068580		8069935	8070612	8071290
642	8075350	8076027	8076703	8077379 8084136	8084811
643			8083460	8090881	8091555
645				8097617	8098290
1041	1 009339/	1 559576	. 2090944	1 9-3/4-1	1 00,000

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7813963	7814681	7815400	7816118	7816836	718
7821141	7821859	7822576	7823293	7824010	717
7828308	7829024	7829740	7830456	7831171	716
7835463	7836178	7836892	7837607	7838321	715
7842606	7843319	7844033	7844746	7845460	714
7849737	7850450	7851162	7851874	7852586	713
7856857	7857568	7858279	7858990	7859701	712
7863965	7864675	7865385	7866095	7866805	711
7871061	7871770	7872479	7873188	7873896	710
7878146	7878853	7879561	7880269	7880976	708
7885219	7885926	7886632	7887339	7888045	707
7892281	7892986	7893691	7894397	7895102	706
7899331	7900035	7900939	7901444	7902148	705
7906370	7907073	7907776	7908479	7909182	704
7913397	7914099	7914801	7915503	7916205	702
7920413	7921114	7921815	7922516	7923216	701
7927418	7928118	7928817	7929517	7930217	700
7934411	7935110	7935809	7936507	7937206	699
7941394	7942091	7942789	7943486	7944183	698
7948365	7949061	7949757	7950454	7951150	697
7955324	7956020	7956715	7957410	7958105	696
7962273	7962967	7963652	7964356	7965050	695
7969211	7969904	7970597	7971290	7971983	694
7976137	7976829	7977521	7978213	7978905	692
7983053	7983744	7984435	7985125	7985816	691
7989957	7990647	7991337	7992027	7992716	690
7996851	7997540	7998228	7998917	7999605	689
8003734	8004421	8005109	8005796	8006484	687
8010605	8011292	8011978	8012665	8013351	686
8017466	8018152	8018837	8019522	8020208	685
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8065191	8065869	8066547	8067225	8007903	678
8071967	8072643		8073997	8074674	677
8078731	8079407	8080083	8080759	8081434	676
8085485	8086160		8087510	8088184	
8092229		8093577	8094250	8094924	
8098962	8099635	8100308	8100980	8101653	1 673

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649	8122447	8123116	8123785	8124454	8125123
650	8129134	8129802	8130470	8131138	8131805
651	8135810	8136477	8137144	8137811	8138478
652	8142476	8143142	8143808	8144474	8145140
653	8149132	8149797	8150462	8151127	8151791
654	8155777	8156441	8157105	8157769	8158433
655	8162413	8163076	8163739	8164402	8165064
656	8169038	8169700	8170362	8171024	8171686
657	8175654	8176315	8176976	8177636	8178297
658	8132259	8182919	8183579	8184239	8184898
659	8188854	8189513	8190172	8190831	8191489
660	8195439	8196097	8196755	8197413	8198071
661	8202015	8202672	8203328	8203985	8204642
662	8208580	8209236	8209892	8210548	8211203
663	8215135	8215790	8216445	8217100	8217755
664	8221681	8222335	8222989	8223643	8224296
665	8228216	8228869	8229522	8230175	8230828
666	823+742	8235394	8236046	8236698	8237350
667	8241258	8241909	8242560	8243211	8243862
668	8247765	8248415	8249065	8249715	8250364
669	8254261	8254910	8255559	8256208	8256857
670	8260748	8261396	8262044	8262692	8263340
671	8267225	8267872	8268519	8269166	8269813
672	8273693	8274339	8274985	8275631	8276277
673	8280151	8280796	8281441	8282086	8282731
674	8286599	8287243	8287887	8288532	8289176
675	8293038	8293681	8294324	8294967	8295611
676	8299467	8300109	8300752	8301394	8302036
677	8305887	8306528	8307169	8307811	8308452
678	8312297	8312937	8313578	8314218	8314858
679	8318698	8319337	8319977	8320216	8321255
680	8325089	8325728	8326366	8327005	8327643
681	8331471	8332109	8332746	8333384	8334021
682	8337844	8338480	8339117	8339754	8340390
683	8344207	8344843	8345479	8346114	8346750
684	8350561	8351196	8351831	8352465	8353100
685	8356906	8357540	8358174	8358807	8359441
686	8363241	8363874	8364507	8365140	8365773
687	8369567	8370199	8370832	8371463	8372095

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8119100	8119769	8120439	8121108	8121778	670
8125792	8126460	8127129	8127797	8128465	669
8132473	8133141	8133808	8134475	8135143	668
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8145805	8146471	8147136	8147801	8148467	666
8152456	8153120	8153785	8154449	8155113	665
8159096	8159760	8160422	8161087	8161750	664
8165727	8166389	8167052	8167714	8168376	663
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8185558	8186217	8186877	8187536	8188195	660
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8198728	8199386	8200043	8200700	8201358	657
8205298	8205955	8200611	8207268	8207924	050
8211859	8212514	8213170	8213825	8214480	655
8218409	8219064	8219718	8220372	8221027	654
8224950	8225603	8226257	8226910	8227563	654
8231481	8232133	8232786	8233438	8234090	653
8238002	8238653	8239305	8239956	8240607	652
8244513	8245163	8245814	8246464	8247114	651
8251014	8251664	8252313	8252963	8253612	650
8257506	8258154	8258803	8259451	8260100	649
8263988	8264635	8265283	8265931	8266578	648
8270460	8271107	8271753	8272400	8273046	647
8276923	8277569	8278214	8278860	8279505	646
8283376	8284021	8284665	8285310	8285955	645
8289820	8290463	8291107	8291751	8292394	044
8296254	8296896	8297539	8298182	8298824	643
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8315499	8316139	8316778	8317418	8318058	640
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8353735	8354369	83550.3	8355638	8356272	635
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690	8388491	8389120	8389750	8390379	8391008
691	8394780	8395409	8396037	8396666	8397294
692	8401061	8401688	8402316	8402943	8403571
693	8407332	8407959	8408586	8409212	8409838
694	8413595	8414220	8414846	8415472	8416097
695	8419848	8420473	8421098	8421722	8422347
696	8426092	8426716	8427340	8427964	8428588
697	8432328	8432951	8433574	8434197	8434819
698	8438554	8439176	8439798	8440420	8441042
639	8444772	8445393	8446014	8446635	8447256
700	8450980	8451601	8452221	8452841	8453461
701	8457180	8457800	8458419	8459038	8459658
702	8463371	8463990	8464608	8465227	846584;
703	8469553	8470171	8470789	8471406	8472024
704	8475727	8476343	8476960	8477577	8478193
705	8481891	8482507	8483123	8483739	8484355
706	8488047	8488662	8489277	8489892	8490507
707	8494194	8494808	8495423	8496037	8496651
708	8500333	8500946	8501559	8502172	8502786
709	8506462	8507075	8507687	8508300	8508912
710	8512583 8518696	8513195	8513807	8514418	8515030
711		8519307	8519917		
712	8524800	8525410	8526020	8526629	8527239
713	8530895	8531504	8532113 8538198	8532722 8538806	8533331 8539414
714	8536982 8543060	8537590 8543668	8544275	854488z	8545489
715	8549130	8549737	8550343	8550949	8551556
716	8555192	8555797	8556403	8557008	8557614
717	8561244	8561849	8562454	8563059	8563663
718	8567289	8567893	8568497	8569101	8569704
719	8573325	8573928	8574531	8575134	8575737
721	8579353	8579955	8580557	8581159	8581761
722	8585372	8585973	8586575	8587176	8587777
723	8591383	8591984	8592584	8593185	8593785
724	8597386	8597985	8598585	8599185	8599784
725	8603380	8603979	8604578	8605177	8605776
726	8609366	8609964	8610562	8611160	8611758
727	8615344	8615941	8616539	8617136	8617733
728	8621314	8621910	8622507	8623103	8623699
729	8627275	8627871	8628467	8629062	8629658

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18	379039	8379670	8380301	8380931	8381562	630
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	404198	8404825	8405452	8406079	8406706	627
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I	8435422	8436065	8436687	8437310	8437932	623
1	8441664	8442286	8442907	8443529	8444150	622
	8447877	8448498	8449119	8449739	8450360	621
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1	8460277	8460896	8461515	8462134	8462752	619
	8466453	8467081	8467700	8468318	8468935	618
١	8472641	8473258	8473876	8474493	8475110	617
	8478810	8479426	8480043	8480659	8481275	616
١	8484970	8485586	8486201	8486817	8487432	615
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١	8497264	8497878	8498492	8499106	8499719	613
1	8503399	8504011	8504624	8505237	8505850	613
1	8509524	8510136	8510748	8511360	8511972	612
1	8515641	8516252	8516863	8517474	8518085	611
ı	8521749	8522359	8522970	8523580	8524190	610
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ı	8540022	8540630	8541238	8541845	8542453	608
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П	8553162	8552768	8553374	8553980	8554586	606
П	8558219	8558824	8559429	8560035	8560640	605
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	8582363 8588379	8582965	8583567	8584169	8584770	602
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1	8630253	8630848	8631443	8632039	8632634	597
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731	8639174	8639768	8640362	8640956	8641550
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734	8656961	8657552	8658144	8658735	8659327
735	8662873	8663464	8664055	8664646	8665236
736	8668778	8669368	8669958	8670548	8671138
737	8674675	8675264	8675853	8676442	8677031
738	8680564	8681152	8681740	8682329	8682917
739	8686444	8687032	8687620	8688207	8688794
740	8692317	8692904	8693491	8694077	8694664
741	8698182	8698768	8699354	8699940	8700526
742	8704039	8704624	8705209	8705795	8706380
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748	8739016	8739597	8740177	8740757	8741338
749	8744818	8745398	8745978	8746557	8747137
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752	8762178	8762756	8763333	8763911	8764488
753	8767950	8768526	8769103	8769680	8770256
754	8773713	8774289	8774865	8775441	8776017
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755 756	8785218	8785792	8786367	8786941	8787515
757	8790959	8791532	8792106	8792680	8793253
758	8796692	8797265	8797838	8798411	8798983
759	8802418	8802990	8803562	8804134	8804706
760	8808136	8808707	8809279	8809850	8810421
761	8813847	8814417	8814988	8815558	8816129
762	8819550	8820120	8820689	8821259	8821829
763	8825245	8825815	8826384	8826953	8827522
764	8830934	8831502	8832070	8832639	8833207
765	8836614	8837182	8837750	8838317	8838885
766	8842288	8842855	8843421	8843988	8844555
767	8847954	8848520	8849068	8849652	8850218
768	8853612	8854178	8854743	8855308	8855874
769	8859263	8859828	8860393	8860957	8861522
770	8864907	8865471	8866035	8866599	8867163
771	8870544	8871107	8871670	8872233	8872796

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8776592	8777108	8777743	8778319	8778894	575
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776	8898617	8899177	8899736	8900296	8900855
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778	8909796	8910354	8910912	8911470	8912028
779	8915375	8915932	8916489	8917047	8917604
780	8920946	8921503	8922059	8922616	8923173
781	8926510	8927066	8927622	8928178	8928734
782	8932068	8932623	8933178	8933733	8934288
783	8937618	8938172	8938727	8939281	8919836
784	8943161	8943715	8944268	8944822	8945376
785	8948697	8949250	8949803	8950356	8950909
786	8954225	8954778	8955330	8955883.	8956435
787	8959747	8960299	8960851	8961403	8961954
788	8965262	8965813	8966364	8966915	8967466
789	8970770	8971320	8971871	8972421	8972971
790	8976271	8976821	8977370	8977920	8978469
791	8981765	8982314	8982863	8983412	8983960
792	8987252	8987800	8988348	8988897	8989445
793	8992732	8993279	8993827	8994375	8994922
794	8998205	8998752	8999299	8999846	9000392
795	9003671	9004218	9004764	9005310	9005856
796	9009131	9009676	9010222	9010767	9011313
797	9014583	9015128	9015673	9016218	9016762
798	9020029	9020573	9021117	9021661	9022205
799	9025468	9026011	9026555	9027098	9027641
800	9030900	9031443	9031985	9032528	9033071
801	9036325	9036867	9037409	9037951	9038493
802	9041744	9042285	9042827	9043368	9043909
803	9047155	9047696	9048237	9048778	9049318
804	9052560	9053101	9053641	9054181	9054721
805	9057960	9058498	9059038	9059577	9060116
806	9063351	9063889	9064428	9064967	9065505
807	9068735	9069273	9069812	9070350	9070887
808	9074114	9074651	9075188	9075726	9070263
809	9079485	9080922	9080559	9081095	9081632
810	9084850	9085386	9085922	9086458	9086994.
811	9090209	9090744	9091279	9091815	9092350
812	9095560	9096095	9096630	9097165	9097699
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8945929	8946483	8947037	8947590	8948143	553
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8956987	8957539	8958092	8958644	8959195	552
8962505	8963057	8963608	8954160	8954711	552
8968017	8968568	8969118	8969669	8970219	551
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9998234	9098768	9099303	9:99837	91003:1	- 535
9103576	9104109	9104643	9105177	1 910571	1 534
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814	9106244	9106778	9107311	9107844	9108378
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817	9122220	9122752	9123284	9123815	9124346
818	9127533	9128064	9128595	9129126	9129656
819	9132839	9133369	9133899	9114410	9134960
820	9138139	9138668	9139198	9139727	9140257
821	9143432	9143961	9144489	9145018	9145547
822	9148718	9149246	9149775	9150303	9150891
823	9153998	9154526	9155054	9155581	9156109
824	9159272	9159799	9160326	9160853	9161380
825	9164539	9165066	9165592	9166118	2166645
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827	9175055	9175580	9176105	9176630	9177155
828	9180303	9180828	9181352	9181877	9182401
829	9185545	9186069	9186593	9187117	9187640
830	9190781	9191304	9191827	9192350	9192873
831	9196010	9196533	9197055	9197578	9198100
832	9201233.	9201755	9202277	9202799	9203321
833	9206450	9206971	9207493	9208014	9208535
834	9211661	9212181	9212702	9213222	9213743
835	9216865	9217385	9217905	9218425	9218945
836	9222063	9222582	9223102	9223621	9224140
837	9227255	9227773	9228292	The same of the sa	9229330
838	9232440	9232958	9233477	9233995	9234515
839	9237620	9238137	9238655	9239172	9239690
840	9242793	9243310	9243827	9244344	9244860
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842	9253121	9253637	9254152	9254668	9255184
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845	9268567	9269081	9269595	9270109	9270622
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848	9283959	9284471	9290100	9290611	9291123
849	9289077				9296233
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853 854	9314579	9315087	9315596	9316164	9316612
855	9319661	9320169	9320677	9321185	9321692
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879 9439889 9440383 9440877 9441371 9441865 880 9444827 9445320 9445814 9446307 9446800 881 9449759 9450252 9450745 9451238 9451730 882 9454686 9455178 9455671 9456163 9456655 883 9459607 9460099 9460591 9461082 9461574 884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486085 889 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 949752 9500239 9505596 893 9508515 <t< td=""><td></td><td>9429996</td><td>9430491</td><td>9430986</td><td></td><td></td></t<>		9429996	9430491	9430986		
880 9444827 9445320 9445814 9446307 9446800 881 9449759 9450252 9450745 9451238 9451730 882 9454686 9455178 9455671 9456163 9456655 883 9459607 9460099 9460591 9461082 9461574 884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486085 889 9489018 9489506 9489994 9490483 949071 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9505596 893 9508515 <t< td=""><td></td><td>9434945</td><td></td><td></td><td>9436429</td><td></td></t<>		9434945			9436429	
881 9449759 9450252 9450745 9451238 9451730 882 9454686 9455178 9455671 9456163 9456655 883 9459607 9460099 9460591 9461082 9461574 884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486585 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	879	9439889	9440383	9440877	9441371	
882 9454686 9455178 9455671 9456163 9456655 883 9459607 9460099 9460591 9461082 9461574 884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	880	9444827	9445320	9445814	9446307	9446800
882 9454686 9455178 9455671 9456163 9456655 883 9459607 9460099 9460591 9461082 9461574 884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9408777 9499264 9490752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	881				9451238	9451730
884 9464523 9465014 9465505 9465996 9466487 885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018		9454686	9455178	9455671		
885 9469433 9469923 9470414 9470905 9471395 886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9480385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018		9459507	9460099			
886 9474337 9474827 9475317 9475807 9476297 887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486085 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9523080 9523555 9524049 9524534 95250618						
887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	885	9469433	9469923	9470414	9470905	
887 9479236 9479726 9480215 9480705 9481194 888 9484130 9484619 9485108 9485597 9486385 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018		9474337	9474827.		947;807	
888 9484130 9484619 9485108 9485597 9486585 889 9489018 9489506 9489994 9490483 9490971 890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	887		9479726	9480215		
890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	888		9484619			
890 9493900 9494388 9494876 9495364 9495852 891 9498777 9499264 9499752 9500239 9500726 892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	889	9489018	9489506			
892 9503649 9504135 9504622 9505109 9505596 893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	890		9494388	9494876		9495852
893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	891	9498777	9499264	9499752	9500239	
893 9508515 9509001 9509487 9509973 9510459 894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	892	9503649	9504135	9504622	9505109	9505596
894 9513375 9513861 9514347 9514832 9515318 895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	893	9508515	9509001	9509487	9509973	9510459
895 9518230 9518716 9519201 9519686 9520171 896 9523080 9523555 9524049 9524534 9525018	894	9513375	9513861		9514832	9515318
	895				9519686	9520171
897 11 9527924 952 409 952 3893 9 29377 5298011	896			9524049		9525018
I The state of the	897 1	9527924	952 409	9523893	9 29377	529801

5 1	6 1	7 1	8	9 1	Diff.
9327274	9327781	9328288	9328795	9329301	507
9332341	9332848	9333354	9333860	9334367	506
9337403	9337909	9338415	9338920	9339426	505
9342459	9342964	9343469	9343974	9344479	- 506
9347509	9348013	9348518	9349022	9349527	505
9352553	9353057	9353561	9354065	925 1569	5.04
9357591	9358095	9358598	9359101	9359005	504
9362623	9363126	9363629	9364132	9364635	403
9367650	9368152	9368655	9369157	9369659	502
9372671	9373172	9373674	9374176	9274077	502
9377686	9378187	9378688	9379189	9379690	502
9382695	9383195	9381696	9384195	9384697	501
9387698	9388198	9388698	9389198	9389698	500
9392696	9393195	9393695	9394194	9394693	500
9397688	9398187	9398685	9399184	9399683	499
9402674	9403172	9403670	9404169	9404667	498
9407654	9408152	9408650	9409147	9409645	497
9412629	9413126	9413623	9414120	9414617	497
9417598	9418095	9418591	9419088	9419584	497
9422561	9423053	9423554	9424049	9424545	496
9427519	9428015	9428510	9429005	9429501	495
9432474	9432966	9433461	9433956	9434450	495
9437418	9437912	9438406	9438900	9439395	494
9442358	9442852	9443346	9443840	9444333	494
9447294	9447787	9448280	9448773	9449266	494
9452223	9452716	9453208	9453701	9454193	493
9457147	9457639	9458131	9458623	9459115	492
9462066	9462557	9463048	9463540	9164031	492
9466978	9467469	9467960	9468451	9468942	491
9471886	9472376	9472866	9473357	9473847	491
9476787	9477277	9477767	9478257	9478747	490
9481684	9482173	9482662	9483151	9483641	490
9486574	9487063	9487552	9488040	9488529	489
9491460	9491948	9492436	9492924	9493412	489
9496339	9496827	9497314	9197802	9498290	488
9501213	9501701	9502188	9502675	9503162	487
9506082		9507055	9507542	9508028	485
9510946	9511432	9511918	9512404	9512889	486
9515803	9516289	9516774	9517260	95177+5	485
9520656	9521141	9521626	9522111	9522595	485
9525503	9525987	9526472	9526956	9527440	485
9530345	19530828	9531312	9531796	19532285	484

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No.	0	1	2	3	4
898	9532763	9533247	9533730	9534214	9534697
899	9537597	9538080	9538563	9539046	9539529
900	9542425	9542908	9543390	9543872	9544355
901	9547248	9547730	9548212	9548694	9549176
902	9552005	9552547	9553028	9553510	9553991
903	9556877	9557358	9557839	9558320	9558801
904	9561684	9562165	9502645	9563125	9563605
905	9566486	9566966	9567445	9567925	9568405
906	9571282	9671761	9572241	9572720	9573199
907	9576073	9676552	9577030	9577509	9577988
908	9580858	9681337	9581815	9582293	9582771
909	9585639	9686117	9586594	9587072	9587549
910	9590414	9590891	9591368	9591845	9592322
911	9595184	9595660	9596137	9596614	9597090
912	9599948	9500425	9600901	9601377	9601853
913	9604708	9505183	9605659	9606135	9606610
914	9609462	9509927	9610412	9610887	9611362
915	9614211	9414686	9615160	9615635	9616109
916	9618955	9619429	9619903	9620377	9620851
917	9623693	9624167	9624640	9625114	9625587
918	9628427	9628900	9629373	9629846	9630319
919	9633155	9633628	9634100	9634573	9635045
920	9637878	9638350	9638822	9639294	9639766
921	9642596	9643068	9643539	9644011	9644482
922	9647309	9647780	9648251	9648722	9649193
923	9652017	9652488	9652958	9653428	9653899
924	9656720	9657190	9657660	9638130	9658599
925	9561417	9661887	9662356	9662826	9663295
926	9666110	9666579	9667048	9567517	9667985
927	9670797	9671266	9671734	9672203	
928	9675480	9675948	9676416	9676883	9677351
929	9680157	9680625	9681092	9681559	9682027
930	9684829	9685296	9685763	9686230	9686697
931	9689497	9689963	9690430	9690896	9696023
932	9694159	9694625	9695091	9695557	9700678
933	9698816	9699282	9699747	9700213	
934	9703469	9703934	9704399	9704863	9705328
935	9708116	9708581	9709035	9709509	9709974
936	9712758	9713222	9713686	9714150	9714614
937	9717396	9717859	9718323	9718786	9719249 9723880
938	9722028	9722491	9722954	9723417	9728506
939	9726656	9727118	1 9727581	19/20043	19/00

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9540012	9540494	9540977	9541460	9541943	483
9544837	9545319	9545802	9546284	9546766	482
9549657	9550139	9550621	9551102	9551584	482
9554472	9554953	9555434	9555915	9556397	481
9559282	9559762	9560243	9560723	9561204	481
9564086	9564566	9565046	9565526	9566006	480
9568885	9569364	9569844	9570323	9570803	480
9573678	9574157	9574636	9575115	9575594	479
9578466	9578945	9579423	9579902	9580380	479
9583249	9583727	9584205	9584683	9585161	478
9588027	9588505	9588982	9589459	9589937	478
9592799	9593276	9593753	9594230	9594707	477
9597567	9598043	9598520	9598996	9599472	477
9602329	9602805	9603280	9603756	9604232	476
9607086	9607561	9608036	9608911	9608987	476
9611837	9612312	9612787	9613261	9613736	475
9616583	9617058	9617532	9618006	9618481	475
9621325	9621799	9622272	9622746	9623220	474
9626061	9626534	9627007	9627481	9627954	47.4
9630792	9631264	9631737	9632210	9632683	473
9635517	9635990	9636462	9636934	9637406	472
9640238	9640710	9641181	9641653	9642125	472
9644953	9645425	9645896	9646367	9646838	471
9649664	9650134	9650605	9651076	9651546	471
9654369	9654839	9655309	9655780	9656250	479
9659069	9659539	9660009	9660478	9660948	470
9668454	9664233	9664703	9665172	9665641	469
9673139	9668923	9669392	9669860	9670329	469
	9673607	9674076	967.4544	9675012	468
9677819	9678287	9678754	9679223	9679690	468
9682494	9682961	9683428	9683895	9684362	467
9691829	9687630	9688097	9688564	9689030	467
9696488	9692295	9692761	9693227	9693693	466
9701143	9696954	9697420	9697885	9698351	466
		9702074	9702539	9703004	465
97°5793 971°438	9706258	9706722	9707187	9707652	465
9715078	9710902	9711366	9711830	9712294	464
9719713	9715542	9716005	9716469	9716932	464
9724343	9724805	9720639	9721102	9721565	463
9728968	9729430		9725731	9726193	462
-	1 37-343	19/29092	19/30334	1 9/30010	11 402

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Nº.	0	1	2	3_	4
940	9731278	9731741	9732202	9732664	9733126
941	9735896	9736358	9736819	9737281	9737742
942	9740509	9740970	9741431	9741892	9742353
943	9745117	9745577	9746038	9746498	9746959
944	9749720	9750180	9750640	9751100	9751560
945	9754318	9754778	9755237	9755697	9756156
946	9758911	9759370	9759829	9760288	9760747
947	9763500	9763958	9764417	9764875	9765334
948	9768083	9768541	9768999	9769457	9769915
949	9772662	9773120	9773577	9774035	9774492
950	9777236	9777693	9778150	9778607	9779064
951	9781805	9782262	9782718	9783175	9783631
952	9786369	9786826	9787282	9787738	9788194
953	9790929	9791385	9791840	9792296	9792751
954	9795484	9795939	9796394	9796849	9797304
955	9800034	9800488	9800943	9801398	9801852
956	9804579	9805033	9805487	9805942	9806396
957	9809119	9809573	9810027	9810481	9810934
958	9813655	9814108	9814562	9815015	9815468
959	9818186	9818639	9819092	9819544	9819997
960	9822712	9823165	9823617	9824069	9824522
961	983334	9827686	9828138	9828589	9829041
962	983171	9832202	9832654	9833105	9833556
963	9836263	9836714	9837165	9837616	9838066
964	9840770	9841221	9841671	9842122	9842572
965	9845273	9845723	9846173	9846623	9847073
966	9849771	9850221	9850670	9851120	9851569
967	9854265	9854714	9855163	9855612	9856061
968	9858754	9859202	9859651	9860099	9860548
969	9863238	9863686	9864134	9.864582	9865030
970	9867717	9868165	9868613	9869060	9869508
971	9872192	9872640	9873087	9873534	9873981
972	9876663	9877109	9877556	9878003	9878449
973	9881128	9881575	9882021	9882467	9882913
974	9885590	9886035	9886481	9886927	9887373
975	9890046	9890492	9890937	9891382	9891828
976	9894498	9894943	9895388	9895833	9896278
977	9898916	9899390	9899835	9900279	9900723
978	9903389	9903833	9904277	9904721	9905164
979	9907827	9908270	9908714	9909158	9909601
980	9912261	9912704	9913147	9913590	9914033
981	9916690	9917133	19917575	9918018	9918461

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1	. 6	7	8	9	Diff.
9733588	9734050	9734511	9734973	9735434	462
9738203	9738664	9739126	9739587	9740048	461
9742814	9743274	9743735	9744196	9744656	461
9747419	9747879	9748340	9748800	9749200	460
0752020	9752479	9752939	9753399	9753858	460
9756615	9757075	9757534	9757993	9758452	459
9761206	9761665	9762124	9762582	9763041	459
9765792	9766251	9766709	9767167	9767625	458
9770373	9770831	9771289	9771747	9772204	458
9774950	9775497	9775864	9776322	9776779	458
9779521	9779978	9780435	9780892	9781348	457
9784088	9784544	9785001	9785457	9785913	457
9788650	9789106	9789562	9790017	9790473	456
9793207	9793662	9794118	9794573	9795028	456
9797759	9798214	9798669	9799124	9799579	455
9802307	9802761	9803216	9803670	9804125	455
9806850	9807304	9807758	9808212	9808666	454
9811388	9811841	9812295	9812748	9813202	454
9815921	9816374	9816827	9817280	9817733	453
9820450	9820902	9821355	9821807	9822260	453
9824974	9825426	9825878	9826330	9826782	452
9829493	9829945	9830396	9830848	9831299	452
9834007	9834459	9834910	9835361	9835812	451
9838517	9838968	9839419	9839869	9840320	451
9843022	9843473	9843923	9844373	9844823	450
19847523	9847973	9848422	9848872	9849322	450
19852019	9852468	9852917	9853366	9853816	450
19050510	9856959	9857407	9857856	9858305	449
9860996	9861445	9861893	9862341	9862790	448
9865478	9865926	9866374	9866822	9867270	448
9869955	9870403	9870850	9871298	9871745	447
19874428	9874875	9875322	9875769	9875216	447
9878896	9879343	9879789	9880236	9880682	447
9883360	9883806	9884252	9884698	9885144	446
9887818	9888264	9888710	9889155	9889601	446
9892273	9892718	9893163	9893608	9894053	445
9896722	9897167	9897612	9898056	9898501	445
9901168	9901612	9902056	9902500	9902944	444
9905608	9906052	9906496	9906940	9907383	444
9910044	9910488	9910931	9911374	9911818	443
9914476	9914919	9915362	9915805	9916247	443
9918903	9919345	9919788	9920230	9920673	442

140.	0	1	2	3	4
982	9921115	9921557	9921999	9922441	9922884
983	9925535	9925977	9926419	9926860	9927302
984	9929951	9930392	9930834	9931275	9931716
985	9934362	9934803	9935244	9935685	9936126
986	9938769	9939210	9939650	9940099	9940531
987	9943172	9943612	9944051	9944491	9944931
988	9947569	9948009	9948448	9948888	9949327
989	9951963	9952402	9952841	9953280	9953719
990	9956352	9956791	9957229	9957668	9958106
991	9960737	9961175	9961613	9962051	9962489
992	9965117	9965554	9965992	9966430	9966868
993	9969492	9969930	9970367	997-804	9971242
994	9973864	9974301	9974738	9975174	9975611
995	9978231	9978667	9979104	9979540	9979976
996	9982593	9983029	9983465	9983901	9984337
997	9986952	9987387	9987823	9988258	9988694
998	9991305	9991740	9992176	9992611	9993046
999	9995655	9996090	9996524	9996959	9997393

TABLE II. Of ARTIFICIAL SINES, to every ! Point of the Compass.

Pts	Log. Sine.	Arith. Co.	Pts	Log. Sine.	Arith. Co.
0 4	8.6907941	1.3092059	4 4	9.8697896	0.1302104
0 1	8.9913015	1.0086985	4 1/2	9.8881853	0.1118147
0 4	9.1665201	0.8334789	4 4	9.9048280	0.0951720
10	9.2902357	0.7097643	50	9.9198464	0.0801536
1 4	9-3855708	0.6144292	5 4	9.9333499	0.0666501
1 1	9.4628280	0.5371710	5 1	9.9454298	0.0545702
1 3	9.5274879	0.4725121	5 4	9.9561632	0.0438368
2 0	9.5828397	0.4171603	60	9.9656153	0.0343847
2 4	9.6309921	0.3690079	6 1	9.9738406	0.0261594
2 1	9.6733865	0.3266135	6 1	9.9808848	0.0191152
2 3	9.7110499	0.2889501	6 3	9.9867857	0.0132143
30	9-7447390	0.2552610	70	9.9915739	0.0084261
3 \$	9.7750296	0.2249704	7 4	9.9952738	0.0047262
3 1	9.8023585	0.1976415	7 1	9-9979037	0.0020963
3 4	9.8270841	0.1729159	7 1	9.9994765	0.0005235
40	9.8494850	0.1505150	80	10.0000000	0.0000000

0.

5	6	7_	8	9	Diff.
9923326	9923768	9924210	9924651	9925093	442
9927744	9928185	9928627	9929068	9929510	442
9932157	9932598	9933039	9933480	9933921	441
9936566	9937007	9937448	9937888	9938329	441
9940971	9941411	9941851	9942291	9942731	440
9945371	9945811	9946251	9946690	9947130	440
9949767	9950206	99506+5	9951085	9951524	440
9954158	9954597	9955036	9955474	9955913	439
9958545	9958983	9959422	9959860	9960298	439
9962927	9963365	9963803	9964241	9964679	438
9967305	9967743	9968180	9968618	9969055	438
9971679	9972116	9972553	9972999	9973427	437
9976048	9976485	9976921	9977358	9977794	437
9980413	9980849	9981285	9981721	9982157	437
9984773	9985209	9985645	9986080	9986516	436
9989129	9989564	9990000	9990435	9990870	435
9993481	9993916	9994350	9994785	9995220	435
9997828	9998262	19998697	9999131	9999566	435

Now followeth TABLE III.

Containing the ARTIFICIAL SINES and TANGENTS, also the NATURAL SINES, to every Degree and Minute of the Quadrant.

From whence the logarithmic Secant is readily found, by only subtracting the Cosine from 20.

And the natural versed Sine is = 1 = the Cofine.

To find the natural Tangent, &c. fee the Introduction to the Tables, at the Begining of this Volume.

N. B. The logarithmic Radius of these Tables is 10. The natural Radius is = 1, and therefore the natural Sines and Cosines must be supposed to have the Decimal Point (.) prefixed.

o Degree.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	100
0	Index 6.	Index 9.	0000000 Index 6.	Infinite.	0	1.	60
1 2 3	4637261 7647561 9408473	9999999 9999999 9999998	4637261 7647562 9408475		0002909	9999999 9999998 9999996	59 58 57
4 5	Index 7 0657860 1626960	9999997 9999995	Index 7 0657863 1626964		0011636	9999993	56
6 7 8	2418771 3088239 3668157	9999993 9999991 9999988	2418778 3088247 3668169	7581222 6911753 6331831	0017453	9999973	54 53 52
9 10	4179681 4637255 5051181	9999985 9999982 9999978	4179696 4637273 5051203	5820304 5362727 4948797	0026180 0029089 0031998	9999966 9999958 9999949	50
12	5429065 5776684	9999974 9999969	5429091 5776715 6098566	4570909 4223285 3901434	0034906 0037815 0040724	9999939 9999928	48
14 15 16	6098530 6308160 6678445	9999964 <u>9999959</u> 9999953	6398201	3601799	0043633	99999995	45
17 18 19	6941733 7189966 7424775	9999947 9999940 9999934	6941786 719 0 026 7424841	3058214 2809974 2575159	0049451 0052360 0055268	9999878 9999863 9999847	43 42 41
20	7859427	9999927	7647610	2352390 2140492	0058177	9999831	39
22 23 24	8061458 8254507 8439328	9999911 9999993 9999894	8061547 8254604 8439444	1938453 1745396 1560556	0066904	9999756	38 37 36
25 26	8616623 8786943	9999885 9999876 9999866	8616738 8787077 8950988	1383262 1212923 1049012	0072721	9999736 9999714 9999692	35 34 33
27 28 29	8950854 9108793 9261190	9999856	9108938	0891062	0081448	9999668	32
30	Co-nne.	9999835 Sine.	9408584 Co-tan.		0087265 Nat.Co.	9999619 Nat, Si.	30 M

o Degree.

				8			
М	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 7.	Indexig.	Index 7.	Index 12.	1		
30	9408419	9999835	9408584	0591416	0087265	9999619	30
31	9550819	9999823	9550996	0449004	0090174	9999593	29
32	9688698	9999812	9688886	0311114	0093083	9999566	28
33	9822334	9999800	9822534	0177466	0095992	9999539	27
34	9951980	9999788	9952192	0047808	0098900	9999511	26
	Index 8.	atolition.	Index 8.	Index 11.		APRIL 1	-)
35	0077867	9999775	0078092	9921908	0101809	9999482	25
		9999762	0200445	9799555	0104718	9999452	24
37	0319195	9999748	0319446	9680554	0107627	9999421	23
38	0435009	9999735	0435274	9564726	0110535	9999389	22
39	0547814	9999721	0548094	9451906	0113444	9999356	21
40	0657763	9999706	0658057	9341943	0116353	9999323	20
41	0764997	9999691	0765306	9234694	0119261	9999289	19
42		9999676	0869970	9130030	0122170	9999254	18
43	0971832	9999660	C972172	9027828	0125079	9999218	17
44	1071669	9999644	1072025	8927975	0127987	9999181	16
45	1169262	9999628	1169634	8830366	0130896	9999141	15
46	1264710	9999611	1265099	8734901	0133805	9999104	14
47	1358104	9999594	1358510	8641490	0136713	9999-65	13
48	1449532	9999577	1449956	8550044	0139622	9999025	12
49	1539075	9999559	1539516	8460484	0142530	9998984	11
50	1626808	9999541	1627267	8372733	0145439	9998942	10
51	1712804	9999522	1713282	8286718	0148348	9998899	9
52		9999503	1797626	8202374	0151256	999885;	8
53	1879848	9999484	1880364	8119636	0154165		7
54	1961020	9999464	1961556	8038444	0157073	9998766	
55		9999444	2041259	7958741	0159982	9998720	5
56	2118949	9999424	2119526	7830474	0162890	9998673	4
57	2195811	9999403	2196408	7803592	0165799	9998625	3
58	2271335	9999382	2271953	7728047	0168707	9998576	2
59	2345568	9999360	2346208	7653792	0171616	9998;27	1
60	2418553	9999338	2419215	7580785	0174524	9998477	0
	Co-fine.	Sine.	Co-tan.	lang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.
-	Index 8.	Index 9.	Index 8.	Index 11.	- Janes	- Co-mic.
0	2418553	9999338	2419215	7580785	0174524	9998477
1	2490332	9999316	2491015	7508985	0177432	9998426
2	2560943	9999294	2561649	7438351	0180341	9998374
3	2630424		2631153	7368847		9998321
4	2698810		2699563		0186158	9998267
5	2766136	9999224	2766912	7233088	0189066	9998212
6	2832434	9999200	2833234	7166766	0191974	9998157
7	2897734		2898559	7101441	0194883	9998101
8	2962067	9999150	2962917	7037083	0197791	9998044
9	3025460	9999125	3026335	6973665	0200699	9997986
10	3087941	9999100	3088842	6911157	0203608	9997927
11.	3149536	9999074	3150462	6849538	0206516	9997867
12	3210269	9999047	3211221	6788779	0209424	
13	3270163		3271143	6728857	0212332	
14	3329243	9998994	3330249	6669751		9997683
15	3387529	9998966	3388563	6611437	0218149	9997620
16	3445043	9998939	3446105	6553895	0221057	9997556
17	3501805	9998911	3502895	6497105	0223965	
18	3557835	9998882	3558953	6441047	0226873	
19	3613150		3614297	6385703	0229781	9997359
20	3667769	9998824	3668945	6331055	0232690	9997292
21	3721710	9998794	3722915	6277085	0235598	
22	3774988	9998764	3776223	6223777	0238506	
23	3827620	1000	3828886		0241414	
24	3879622	9998703	3880918		0244322	
25	3931008	9998672	3932336	6067664	0247230	_
26	3981793	9998641	3983152	6016848	0250138	9996871
27	4031990	9998609	4033381	5966619	0253046	
28	4081614	9998577	4083037	5916963		9996724
29	4130676	9998544	4132132		0258862	9990049
30	4179190	9998512	4180679	5819321	0261769	9990573

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 8.	Index 9	Index 8.	Index 11.	700		1
30	4179190	9998512	4180679	5819321	0261769	9996573	30
11	4227168	9998478	4228690	5771310	0264677	9996496	_
32	4274621	9998445	4276176		0267585	9996419	
33	4321561	9998411	4323150	5676850	0270493		27
34	4367999	9998376	4369622		0273401		26
35	4413944	9998342	4415603	5584397	0276309	9996182	25
36	4459409	9998306	4461103	5538897	0279216	9996101	24
37:	4504402		4506131	5493869	0282124	9996019	23
38	4548934		4550699	5449301	0285032	9995936	22
	4593013	9998199	4594814	5405186	0287940	9995853	21
10	4636649	9998162	4638486	5361514	0290847	9995769	20
11	4679850		4681725	5318275	0293755	9995684	19
2	4722626	9998088	4724538	5275462	0296662	9995598	18
-	4764984	9998050	4766933	5233067	0299570	9995511	17
	4806932	9998012	4808920	5191080	0302478	9995424	16
5	4848479	9997974	4850505	5149495	0305385	9995336	15
6	4889632	9997935	4891696	5108304	0308293	9995247	14
	4930398	9997896	4932502	5067498	0311200	9995157	13
	4970784	9997856	4972928	5027072	0314108		12
	5010798	9997817	5012982	4987018	0317015	9994974	11
_,	5050447	9997476	5052671	4947329	0319922	9994881	10
1	5089736	9997736	5092001	4907999	0322830	9994788	9
		9997695	5130978	4869022		9994694	8
		9997653	5169610	4830390		9994599	76
		9997612	5207902	4792098		9994503	
		9997570	5245860	4754140	0334459	9994406	5
		9997527	5283490	4716510	0337366	9994308	4
7		9997484	5320797	4679203		9994209	3
	01	9997441	5357784	4642213		9994109	2
	391863		5394466	4605534	0346088	9994009	1
	Co-fine.	9997354	5430838	4569162	0348995	9993908	0

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural	Natural Co fine	-
-	7/0	7	7.4.0	7.7	Sine.	Co-fine.	
C	Index 8.	Index 9.	Index 8. 5430838	Index 11.	0348995	9993908	1
1	-		The second second second	_			11.
2	Edition States		5466909 5502683	4533091	0351902	9993806	
	1212221		5538166	4497317	0354809		
3	5570536	9997220	5573362		0360623	9993599 9993495	
5	5605404		5608276		0363530		
6		9997082	5642912	4357088	0366437	9993284	
7	10 0000	9997036	5677275	4322725	0369344	9993177	
8		9996989	5711368		0372251	9993069	
9		9996942	5745197	4254803	0375158	9992960	
ó	5775660	9996894	5778766	4221234	0378065	9992851	
1	5808923	9996846	5812077	4187923	0380971	9992740	10
2		9996798	5845136	4154864	0388878	9992629	
3		9996749	5877945	4122055	0386785	9992517	
4	5907209	9996700	5910509	4089491	0389691	9992404	
5	5939483	9996650	5942832	4057168	0392598	9992290	4
6	5971517	9996601	5974917	4025083	0395505	9992175	4
7	6003317	9996550	6006767	3993233	0398411	9992060	A
8	6034886	9996500	6038386	3961614	0401318	9991944	4
9	6066226	9996449	6069777	3930223	0404224	9991827	4
0	6097341	9996398	6100943	3899057	0407131	9991709	4
1	6128235	9996346	6131889	3868111	0410037		3
2	6158910			3837384			3
3		9996242	6193127	3806873			3
4	6219616	9996189	6223427	3776573	0418757		3
5	6249654	9996136	6253518	3746482	0421663		3
6	6279484	9996082	6283402	37165.98		111 1 0	3
7 8		9996028	6313083	3686917			3
- 1		9995974	6371845	3657437 3628155	0430382		3
9		9995919	6400931	3500060		9990482	3
-	Co-fine.	Sine.	Co-tan.	Tang.			N

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 8.	Index 9.	Index 8.	Index 11.			
30	6396796	9995865	6400931	3599069	0436194	9990482	30
31	6425634	9995809	6429825	3570175	0439100	9990355	20
32	6454282	9995753	6458528	3541472	0442006	9990227	28
33	6482742	9995697	6487044	3512956	0444912	9990098	27
34	6511016	9995641	6515375	3484625	0447818	9989968	26
35	6539107	9995584	6543522	3456478	0450724	9989837	25
36	6567017	9995527	6571490	3428510	0453630	9989705	24
37	6594748	9995469	6599279	3400721	0456536	9989573	2:
38	6622303	9995411	6626891	3373109	0459442	9989440	2
39	6649684	9995353	6654331	3345669	0462347	9989306	2
40	6676893	9995294	6681598	3318402	0465253	9989171	20
I	6703932	9995236	6708697	3291303	0468150	9989035	10
2	6730804	9995176	6735628	3264372	0471064	9988898	T
13	,		6762393	3237607		9988761	17
14	6784052	9995056	6788996	3211004	0476876	9988623	16
45	6810433	9994996	6815437	3184563	0479781	9988484	15
16	6836654	9994935	6841719	3158281	0482687	9988344	14
17	6862718	9994874	6867844	3132156	0485592	9988203	1
18	6888625	9994812	6893813	3106187	0488498	9988061	1
19	6914379	9994750	6919629	3080371	0491403	9987918	11
50	6939980	9994688	6945292	3054708	0494308	9987775	10
51	6965431	9994625	6970806	3029194	0497214	9987631	-
52	6990734	9994562	6996172	3003828	0500119	9987486	3
3	7015889	9994498	7021390	2978610	0503024	9987340	7
4	7040899	9994435	7046465	2953535	0505929	9987193	é
5	7065766	9994370	7071395	2928605	0508835	9987045	5
6	7090490	9994306	7096185	2903815	0511740	9986897	4
7	7115075	9994341	7120834	2879166	0514645	9986748	3
8	7139520	9994176	7145344	2854655	0517550	9986598	2
9	7163829	9994110	7169719	2830281	0520455	9986447	1
ó	7188002	9994044	7193958	2806042	0523360	9986295	0
1	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

60-5958 5756 55-54

3	Degr	ees.
	1'	1.77.1

M	Sine.	Co-fine.	Tang.	Ço-tan.	Natural Sine.	Natural Co-fine.	
	Index 8.	Index 9.	Index 8.	Index 11.			
0	7188002	9994044	7193958	2806042	0523360	9986295	16
1	7212040	9993978	7218063	2781937	0526264	9986142	15
2	7235946	9993911	7242035	2757965	0529169		
3	7259721	9993844	7265877	2734123	0532074	9985835	15
4	7283366	9993776	7289589	2710411	9534979	9985680	15
5	7306882	9993708	7313174	2686826	0537883	9985524	15
6	7330272	9993640	7336631	2663369	0540788	9985367	1
-7	7353535	9993572	7359964	2640036	0543693	9985209	
8	7376675	9993503		2616828	0546597	9985050	1
9	7399691	9993433	7406258	2593742	0549502	9984891	ŀ
10	7422586	9993364	7429222	2570778	0552406	9984731	
11	7445360	9993293	7452067	2547933	0555311	9984570	1
12	7468015	9993223	7474792	2525208	0558215	9984408	4
13	7490553	9993152		2502600	0561119		14
14	7512973	9993081	7519892	2480108	0564024	9984081	4
15	7535278	9993009	7542269	2457731	0566928	9983916	1
16	7557469	9992938	7564531	2435469	0569832	9983751	4
17		9992865	7586681	2413319	0572736	9983585	4
18	7601512	9992793	7608719	2391281	0575640	9983418	4
19		9992720	7630647	2369353	0578544	9983250	4
20	7645111	9992646	7652465	2347535	0581448	9983081	1
21	7666747	9992572	7674175	2325825	0584352	9982911	3
22	7688275	9992498		2304223	0587256		3
23	7709697	9992424		2282726	0590160	9982570	3
24	7731014			2261335	0593064	9982398	3
25	7752226	9992274	7759952	2240048	0595967	9982225	100
26	7773334	9992198	7781136	2218864	0598871	9982051	3
27		9992122	7802218	2197782	0601775	9981876	3
28	7815244	9992046	7823199	2176801	9694678	9981701	3
29	7836048	9991969	7844079	2155921	0607582	9981525	3
30	7856753	9991892	7864861	2135139	0610485	9981348	3
	Co-line.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	1

M	Sine.	Co-fine.	Tang.	Co tan.	Natural Sine.	Natural Co-fine.	
-	Index 8.	Index 9.	Index 8.	Index 11.			
30	7856753	9991892	7864861	2135139	0610485	9981348	30
31	7877359	9991815	7885544	2114456	0613389	9981170	20
	7897867	9991737	7906130	2093870	0616292	9980991	2
33	7918278	9991659	7926620	2073380	0619196	9980811	2
	7938594	9991580	7947014	2052986	0622099	9980630	2
35	7958814	9991501	7967313	2032687	0625002	9980449	2
36		9991422	7987519	2012481	0627905	9980267	2
37	7998974	9991342	8007632	1992368	0630808	9980084	2
38	8018915	9991262	8027653	1972347	0633711	9979900	2
39	8038764	9991182	8047583	1952417	0636614	9979715	2
40	8058523	9991101	8067422	1932578	0639517	9979529	2
41	8078192	9991020	8087172	1912828	0642420	9979343	I
42	8097772	9990938	8106834	1893166	0645323	9979156	1
43	8117264	9990856	8126407	1873593	0648226	9978968	1
44	8136668	9990774	8145894	1854106	0651129	9978779	1
45	8155985	9990691	8165294	1834706	0654031	9978589	1
46		9990608	8184608	1815392	0656934	9978398	ī
47	1- "	9990525	8203838	1796162	0659836	9978206	1
48		9990441	8222984	1777016	0662739	9978014	1
49			8242046	1757954	0665641	9977824	1
50	10	9990273	8261026	1738974	0668544	9977627	1
-	8270112	9990188	8279924	1720076	0671446	9977432	Т
52			8298741	1701259	0674348	9977236	
53		9990017	8317478	1682522	0677251	9977039	
54	10 10	9989931	8336134	1663866	0680153	9976842	
55	10	9989845	8354712	1645288	0683055	9976644	_
56			8373211	1626789	0685957	9976445	-
57			8391633	1608367	0688859	9976245	
		9989584	8409977	1590023	0691761	9976044	
59	1-011	9989496	8428245	1571755	0694663	9975842	
	8435845		8446437	1553563	0697565	9975640	
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	N

-			4.0	egrees.			_
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 8.	Index 9.	Index 8.	Index 11.		-	-
0	8435845	9989408	8446437	1553563	0697565	9975640	60
(1	8453874	9989319	8464554	1535446	0700466	9975437	55
2	8471827	9989230	8482597	1517403	0703368	9975233	58
3	8489707	9989141	8500506	1499434	0706270		157
4	8507512		8518461	1481539	0709171	9974822	56
5	8525245	9988962	8536283	1463717	0712073	9974615	55
6	8542905	9988871	8554034	1445966	0714974	9974407	54
7	8560493		8571713	1428287	0717876	9974199	53
8	8578010	9988689		1410679		9973990	
9	8595457	9988598	8606859	1393141	0723678	9973780	
10	8612833		8624327	1375673	0726580	9973569	50
11	8630139	9988414	8641725	1358275	0729481	9973357	49
12	8647376		8659055	1340945	0732382	9973144	48
13	8664545	9988228	8676317	1323683	0735283	9972931	47
14	8681646	9988135	8693511	1306489	0738184	9972717	46
15	8698680	9988041	8710638	1289362	0741085	9972502	45
16	8715646	9987947	8727699	1272301	0743986	9972286	44
17	8732546	9987853	8744694	1255306	0746887	9972069	4
18	8749381	9987758	8761623	1238377	0749787	9971851	42
19	8766150	9987663	8778487	1221513	0752688	9971632	41
20	8782854	9987567	8795286	1204714	0755589	9971413	49
21	8799493	9987471	8812022	1187978	0758489	9971193	39
22	8816069	9987375	8828694		0761390	9970972	38
23	8832581	9987278	8845303		0764290		37
24	8849031	9987181	8861850	1138150	0767190	9970527	36
25	8865418	9987084	8878334	1121666	0770091	9970303	35
26	8881743	9986986	8894757	1105243	0772991	9970079	34
27	8898007	9986888	8911119	1088881	0775891	9969854	33
28	8914209	9986790	8927420	1072580		9969628	32
29	8930351	9986691	8943060	1056340	0781691	9969401	31
30	8946433	9986591	8959842	1040158	0784591	9969173	30
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 8.	Index 9.	Index 8.	Index 11.	.0.000		1
30	8946433	9986591	8959842	1040158	0784591	9969173	30
31	8962455	9986492	8975963	1024037	0787491	9968944	29
32		9986392	8992026	1907974	0790391	9968715	28
33	8994322	9986292	9008030	0991970	9793290	9968485	27
34	9010168	9986191	9023977	0976023	0796190	9968254	26
35	9925955	9986090	9039866	0960134	0799090	9968022	25
36	9041685	9985988	9055697	0944303	0801989	9967789	24
37	9057358	9985886	9071472	0928528	0804889	9967555	23
	9072975	9985784	9087190	0912810		9967320	22
39	9088535	9985682	9102853	0897147	0810687	9967085	2.1
40	9104039	9985579	9118460	0881540	0813587	9966849	20
41	9119487	9985475	9134012	0865988	0816486	9966612	10
	9134881	9985372	9149509	0850491	0819385	9966374	18
	9150219	9985268	9164952	0835048	0822284		17
44	9165504	9985163	9180340	0819660		9965895	16
45	9180734	9985058	9195675	0804325	0828082	9965655	11
46	9195911	9984953	9210957	0789043	0830981	9965414	14
47		9984848	9226186	0773814	0833880	9965172	1
48		9984742	9241363	0758637	0836778	9964929.	1:
49		9984636	9256487	0743513	0839677	9964685	L
50	9256089	9984529	9271560	0728440	0842576	9964440	10
51	9271003	9984422	9286581	0713419	0845474	9964194	9
52	9285866	9984315	9301552	0698448	0848373	9963948	9
53	9300678	9984207	9316471	0683529	0851271	9963701	7
54		9984099	9331340	0668660	0854169	9963453	.6
55	9330150	9981990	9346160	0653840	0857067	9963204	5
56	9344811	9983881	9360929	0639071	0859966	9962954	4
57	9359422	9983772	9375650	0624350	0862864	9962703	3
	9373983	9983663	9390321	0609679	0865762	9962452	2
59		9983553	9404944	0595056	0868660	9962200	. 1
00	9402960	9983442	9419518	0580482	0871557	9961947	0
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

A Table of Artificial Sines,

			5 De	grees.	AND TON TO		-
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	1
	Index 8.	Index 9	Index 8.	Index 11.	1000	- 1 10	-
0	9402960	9983442	9419518	0580482	0871557	9961947	6
1	9417376	9983332	9434044	0565956	0874455	9961691	5
2	9431743	9983220	9448523	0551477	0877353	9961438	1
3	9446063	9983109	9462954	0537046	0880251	9961182	1
4	9460335	9982997	9477338	0522662	0883148	9960926	
5	9474561	9982885	9491676	0508324	0886046	9960669	5
6	9488739	9982772	9505967	0494033	0888943	9960411	١-
7 8	9502871	9982660	9520211	0479789	0891840	9960152	
8	9516957	9982546	9534410	0465590	0894738	9959892	
9	9530996	9982433	9548564	0451436	0897635	9959631	
0	9544991	9982318	9562672	0437328	0900532	9959369	5
1	9558940	9982204	9576735	0423265	0903429	9959107	4
2	9572843	9982089	9590754	0409246	0906326		4
3	9586703	9981974	96047.28	0395272	0909223	9958580	4
4	9600517	9981859	9618659	0381341	0912119		4
5	9614288	9981743	9632545	0367455	0915016	9958049	4
6	9628014	9981626	9646388	0353612	0917913	9957782	4
	9641697	9981510	9660188	0339812	0920809		4
	9655337	9981393		0326056	0923706		4
		9981275		0312342	0926602		4
9	9682487	9981158	9701330	0298670	0929499		4
1		9981040	9714959	0285041	0932395		3
		9980921		0271453	0935291	9956165	3
		9980802		0257908	0938187	9955892	
4		9980683		0244403	0941083		3
31		9980563	9769060	0230940	0943979	9955345	3
		9980443		0217517	0946875	0000	3
		9980323		0204135	0949771		3
		9980202	9809206		0952666	2/2 12 11	3
4		9980081		0177493	0955562	9954240	
- 12		9979960		0164231	0958458	11111	3
	Co-fine.	Sine	Co-tan.	Tang.	Nat. Co.	Nat. Si.	N

M	Sine.	Co-fine.	Tang.	Co-tan.	Nat. Si.	Nat. Co.	
-	Index 8.	Index 9.	Index 8.	Index 1.1.			
30	9815729	9979960	9835769	0164231	0958458	9953962	30
1	9828829	9979838	9848991	0151009	0961353	9953683	20
		9979716	9862173	0137827	0964248	9953403	2
			9875317	0124683	0967144	9953122	2
	9867891	9979470	9888421	0111579	0970039	9952840	2
15	9880834	9979347	9901487	0098513	0972934	9952557	2
16	9893737	9979223	9914514	0085486	0975829	9952274	2
37	9906602	9979099	9927503	0072497	0978724	9951990	2
	9919429		9940454	0059546	0981619	9951705	2
19	9932217	9978850	9953367	0046633	0984514	9951419	2
10	9944968	9978725	9966243	0033757	0987408	9951132	2
11	9957681	9978599	9979081	0020919	0990303	9950844	1
	9970356	9978473	9991883	0008117	0993197	9950555	1
			Index 9.	Index 10.	Land The		
13	9982994	9978347	0004647	9995353		9950266	
14	9995595 Index 9.	9978220	0017375	9982625	0998986	9949976	1
15	0.0	9978093	0030066	9969934	1001881	9949685	1
16	0020687	9977966	0042721	9957279	1004775	9949393	1
47	0033179	9977838	0055340	9944660		9949100	1
48		9977710	0007924		1010563	9948806	1
19	0058053	9977582	0080471	9919529	1013457	9948512	1
50	0070436	9977453	0092984	9907016	1016350	9948217	1
;1	0082784	9977323	0105461	9894539	1019245	9947921	
52	0095096	9977194	0117903	9882097	1022138	9947624	1
53		9977064	0130310	9869690	1025032	9947326	1
54	0119616	9976933	0142682	9857318	1027925	9947027	1.8
55	0131823	9976803	0155021	9844979	1030819	9946728	h
56	0143996	9976672	0167325	9832675	1033712	9946428	
7	0156135	9976540	0179594	9820406			0
	0168239	9976408	0191831	9808169			
59	0180300	9976276		9795967	1042392		0
60	0192346		0216202	9783798	1045285	9945218	Q
	Co-tine.		Co-tan.	Tang.	Nat.Co.	Nat. Si.	N

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6 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	-
	Index 9.	Index 9.	Index 9.	Index 10.			1
0	0192346	9976143	0216202	9783798	1045285	9945218	6
1	0204348	9976011	0228338	9771662	1048178	9944914	5
2	0216318	9975877	0240441	9759559	1051070		
3		9975743	0252510	9747490	1053963		5
4	0240157	9975609	0264548	9735452	1056856		
5	0252027	9975475	0276552	9723448	1059748	9943688	5
6	0263865	9975340	0288524	9711476	1062641	9943379	
7	0275669		0300464	1 1124	1065533	9943069	5
8		9975069	0312373	9687627	1068425		5
	0299182			9675751	1071318		5
0	0310890		0336093	9663907	1074210		5
1	0322567	9974660	0347906	9652094	1077102		4
2		9974523	0359688	9640312	1079994		
3	0345825		0371439	9628561	1082885		
	0357407		0383159	9616841	1085777	9940879	4
5	0368958	9974110	0394848	9605152	1088669		4
6		9973971	0406506	9593494	1091560		
7		9973833	0418134	9581866	1094452		
		9973693		9570269	1097343		
9		9973554	0441299	9558701	1100234	9939209	
-1		9973414		9547164			-
		9973273		9535657	1106017	9938648	39
		9973132		9524179			17
~		9972850		9501311		9937679	* 5
		9972708		9489922		2 2 3 3 4 3 4 1	35
÷١		9972566		9478561			34
- 1		9972423		9467229			33
	2 2 11	9972280		9455926			32
		9972137		9444651			31
		9971993		9433405			30
- 1	Co-fine.		Co-tan.	Tang.		Nat. Si.	M

			0 D	egrees.			
М	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
20	0538588	9971993	0566595	9433405	1132032	9935718	30
31	0549661	9971849	9577813	9422187	1134922	9935388	29
32	0560706	1000	0589002		1137812	9935058	28
33		9971559	0600164	9399836	1140702	9934727	27
34	0582711	9971414	0611297	9388703	1143592	9934395	26
35	0593672	9971268	0622403	9377597	1146482	9934062	25
36	0604604	9971122	0633482	9366518	1149371	9933728	24
37	0615509	9970976	0644533	9355467	1152261	9933393	23
18	0626386	9970829	0655556	9344444	1155151	9933057	22
39	0637.235	9970682	0666553	9333447	1158040	9932720	21
40	9648057	9970535	0677522	9322478	1160929	9912383	20
4	0658852	9970387	0688465	9311535	1163818	9932045	19
12	0669619	9970239	0699381	9300619	1166707	9931706	18
43	0680360	9970090	0710270	9289730		9931366	17
14	0591074	9969941	0721133	9278867	1172485	9931025	16
15	0701761	9969792	0731969	9268031	1175374	9930684	15
	0712421	9969642	0742779	9257221	1178263	9930342	14
	0723055	9909492	0753563	9246437	1181151	9929999	13
	0733663	9969342	0764321	9235679			12
19	0744244	9969191	0775053	9224947	1186928	9929310	11
0	9754799	9969040	9 785760	9214240	1189816	9928964	10
1	0765329	9958888	0796441	9203559	1192704	9928617	9
2	0775832	9968736	0807096			9928270	
		9968584	0817726			9927922	76
4	0796762	9968431		9171669		9927573	
5	807189	9968278	0838911	9161089		9927223	_5
6	0817590	9968125	0849466	9150534	1207144	9926872	4
7	0827966	9967971	0859996			9926521	3
8	0838317	9967817		9129499		9926169	2
		9967662	0880981	9119019	1215806	9925816	1
0		9967507		9108502	1218693	9925462	0
	Co-fine.	Sine.	Co-tan.	Tang.	Nat Co	Vat. Si.	M

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7 Degrees. M Sine. Natural Co-fine. Tang. Natural Co-tan. Sine. Co-fine. Index 9. Index 9. Index 9. Index 10. 9925462 60 9925107 59 9924751 58 0922660 9077340 1227 355 9924394 57 0899903 9966884 0933020 9066980 1230241 9924036 56 1233128 9923678 55 9923319 54 9922959 53 1241788 9922598 1244674 9922236 51 1247 560 9921874 50 1004872 8995128 9921147 48 1256218 9920782 47 1035317 8964683 1259104 9920416 46 9919681 44 9919313 43 9918914 42 1075591 8924409 1050096 9964493 9918574 41 1276416 9918203 40 2 I 991,7459 38 1089272 9963841 9917086 37 1287956 9916712 36 1099010 9963677 1108726 9963513 9916337 35 1118420 9963348 9915,61 34 1296609 9915584 33 1128092 9963183 1137742 9963018 9915200 32 1147370 9962852 1184518 8815482 9914828 31 1305262 9914449 30 Co-nne. Sine. Nat. Co. Nat. Si. M Co-tan. Tang!

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	index 10.			
30	1156977	9962686	1194291	8805709	1305262	9914449	30
31	1166562	9962519	1204043	8795957	1308146		29
32	1176125	9962352	1213773	8786227	1311030	9913688	28
33	1185667	9962185	1223482	8776518	1313913	9913306	27
34	1195,188	9962017	1233171	8766829	1316797	9912923	26
35	1204688	9961849	1242839	8757161	1319681	9912539	25
36	1214167	9961681	1252486	8747514	1322564	9912155	24
37	1223624	9961512	1262112	8737888	1325447	9911770	23
38	1233061	9961343	1271718	8728282	1328330	9911384	22
39	1242477	9961174	1281303	8718697	1331213	9910997	21
40	1251872	9961004	1290868	8709132	1334096	9910609	20
41	1261246	9960834	1300413	8699587	1336979	9910221	19
42	1270600	9960663	1309937	8690063	1339862	9909832	18
43	1279934	9960492	1319442	8680558	1342744	9909442	17
44	1289247	9960321	1328926	8671074	1345627	9909051	16
45	1298539	9960149	1338390	8661609	1348509	9908659	13
46		9959977	1347835	8652165	1351392	9908266	12
47	1317064	9959804	1357260	8642740	1354274	9907872	1
48		9959631	1366665	8633335	1357156		1
49		9959458	1376051	8623949	1360038	9907083	1
50	1344702	9959284	1385417	8614583	1362919	9906687	10
51	1 000 10	9959111	1394764	8605236	1365801	9906290	1
52	100		1404092	8595908	1368683	9905892	
53		1000 1	1413400		1371564	9905493	
54		14000	1422689		1374445	9905094	
55		_	1431959	8568041	1377327	9904694	_
50		9958235	1441210		1380208	100	
57		9958059	1450442		1383089		
58		9957882	1459655	8540345	1385970		
59	1 . 327		1468850		1388850		
-	- 27777		1478025	8521975	1391731	9902680	1-
	Co-fine.	Sine.	Co-tan.	Tang.	II Nat. Co.	Nat. Si.	I

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8 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			1
0	1435553	9957528	1478025	8521975	1391731	9902680	60
1	1444532	9957350	1487182	8512818	1394612	9902275	50
2	1453493		1496321	8503679	1397492	9901869	58
3	1462435		1505441			9901462	
4	1471358		1514543			990,1054	56
5	1480262		1523627	8476373	1406132		55
.6	1489148		1532692		1400012		
78	1498015		1541739		1411892		53
	1506864			8449231	1414772		52
9	1515694			8440220	1417651	9899003	51
10	1524507	9955734		8431227	1420531	9898590	50
11	1533301	9955552	1577748		1423410	0 1	49
12	1542076	9955370		8413294	1426289		48
13		9955188		8404354	1429168		47
4	1559574	9955005		8395431	1432047	-0-6-1	40
15	1568296	9954822	1613473	8386527	1434926		45
16	1577000	9954639	1622361	8377639	1437805		44
17	1585686		1631231		1440684		43
8	1594354		1640083		1443562		42
9	1611639	9954087	1648919		1446440	0 1	41
20		9953902		8342263			40
11	1620254	9953717	1666538			9893994	
22	1628853	9953531	1675322				38
3		9953345	1684089				37
4	1645998	9953159		8307161. 8298428	1460830	9892298	30
5		9952972					_
6	1663073	9952785		8289711			34
7 8	10 0	9952597	1718989		1469463		
9		9952409	1736338		1472340		
	1697021	9952033		8255012	1478094		30
0	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.		-

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			ľ
0	1697021	9952033	1744988	8255012	147809+	9890158	13
1	1705465	9951844	1753622	8246378	1480971	9889728	2
2	1713893	9951654	1762239	8237761	1483848	9889297	2
3	1722305	9951464	1770840	8229160	1480724	9888865	
4	1730699	9951274	1779425	8220575	1489601	9888432	12
5	1739077	9951084	1787993	8212007	1492477	9887998	2
6	1747439	9950893	1796546	8103454	1495353	9887563	2
7	1755784	9950702	1805082	8194918	1498230	9887128	2
8	1764112	9950510	1813602	8186398	1501106	9886692	2
9	1772425	9950318	1822106	8177894	1503981	98862,5	2
0	1780721	9950126	1830595	8169405	1506857	9885817	2
1	1789001	9949933	1839068	8160932	1509733	9885378	1
2	1797265	9949740	1847525	8152475	1512008	9884938	1
3	1805512	9949546	1855966	8144034	1515484	9884498	1
4	1813744	9949352	1864392	8135608	1518359	9884057	1
5	1821960	9949158	1872802	8127198	1521234	9883615	1
6	1830160	9948964	1881196	8118804	1524109	9883172	1
7		9948769	1889575	8110425	1526984	9882728	1
8	1846512	9948573	1897939	8102061	1529858	9882283	1
9	1854665	9948377	1906287	8093713	1532733	9881838	1
Ó	1862802	9948181	1914621	8085379	1535607	9881392	1
ī	1870923	9947985	1922939	8077061	1538482	9880945	
2	1879029	9947788	1931241	8068759	1541356	9880497	
3		9947591	1939529	8060471	1544230	9880048	
4	1895195	9947393	1947802	8052198	1547104	9879598	1
5	1903254	9947195	1956019	8043941	1549978	9879148	1
6	1911299	9946997	1964302	8035698	1552851	9878697	
7	1919328	9946798	1972530	8027470	1555725	9878245	1
8	1927342	9946599	1980742	8019257	1558598	9877792	
9	1935341	9946399	1988942	8011059	1561472	9877338	
Ó	1943324	9946199	1997125	8002875	1564345	9876883	
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	N

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9 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.	S D S YOUL		-
0	1943324	9946199	1997125	8002875	1564345	9876883	60
1	1951293	9945999	2005294	7994706	1567218	9876428	50
2	1959247	9945798	2013449	7986551	1570091	9875972	5
3	1967186	9945597	2021588		1572963	9875515	5
4	1975110	9945396	2029714		1575836	9875057	5
5	1983019	9945194	2037825	7962175	1578708	9874598	5
.6	1990913	9944992	2045922	7954078	1581581	9874138	5
.7	1998793	9944789		7945996	1584453	9873677	5
8	2006558	9944587		7937928	1587325		5
9	2014509	9944383		7929874	1590197	9872754	5
10	2022345	9944180	2078165	7921835	1593069	9872291	5
11	2030167	9943975	2086191	7913809	1595940	9871827	4
12		9943771	2094203	7905797	1598812	9871362	
13	2045767	9943566	2102200		1601683	9870897	5 .
14	2053545	9943361	2110184	7889816	1603555		4
15	2061309	9943156	2118153	7881847	1607426	9869964	1-
16	2069059	9942950	2126109	7873891	1610297	9869496	4
17	2076795	9942743	2134051	7865949	1613167	9869027	4
18		9912537	2141980	1	1616038	9868557	4
19	2092224	9942330	2149894		1618909		
20	2099917	9942122	2157795		1621779		1-
21	2107597	9941914	2165683		1624650		
22		9941706		7826444			3
23		9941498	2181417		1630390		3
24		9941289	2189264		1633260		1 -
25	2138176		2197097		1636129		۱÷
26	2145787			1			
27		9940657	2212724				
28	2160967		2220518	1			
29	2168536		2228298				
30	2176092 Co-fine.	9940027 Sine	223606; Co-tan.	7763935 Tang.	1650476 Nat.Co.		e j ce

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.		-	
30	2176092	9940027	2236065	7763935	1650476	9862856	30
31	2183635	9939815	2243819	7756181	1653345	9862375	29
32	2191164	9939603	2251561	7748439	1656214	9861894	28
33		9939391	2259289	7740711	1659082	9861412	27
34	2206182	9939178	2267004	7732996	1661951	9860929	26
35	2213671	9938965	2274706	7725294	1664819	9860445	25
36	2221147	9938752	2282395	7717605	1667687	9859960	24
37	2228609	9938538	2290071	7709929	1670555	9859474	23
38	2236059	9938324	2297735	7702265	1673423	9858988	22
39	2243495	9938109	2305386	7694614	1676291	9858501	21
40	2250918	9937894	2313024	7686976	1679159	9858013	20
41	2258328	9937679	2320650	7679350	1682026	9857524	19
42	2265725	9937463	2328262	7671738	1684894	9857034	18
43	2273110	9937247	2335863	7664137	1687761	9856544	17
44	2280481	9937030	2343451	7656549	1690628	9856053	10
45	2287839	9936813	2351026	7648974	1693495	9855561	1
46	2295185	9936596	2358589	7641411	1696302	9855068	1.
47	2302518	9936378	2366139	7633861	1699228	9854574	I
48	2309838	9936160	2373678	7626322	1702095	9854079	1:
49	2317145	9935942	2381203	7618797	1704961	9853583	I
50	2324440	9935723	2388717	7611283	1707828	9853087	10
51	2331722	9935504	2396218	7603782	1710694	9852590	1
52	2338992	9935285	2403708	7596292	1713560	9852092	1
53	2346249	9935065	2411185	7588815	1716425	9851593	1
54	2353494	9934844	2418650		1719291	9851093	
55	2360726	9934624	2426103	7573897	1722156	9850592	-
56	2367946	9934403	2433543	7566457	1725022	9850091	1
57	2375153	9934181	2440972	7559028	1727887	9849589	
58	2382349	9933959	2448389	7551611	1730752	9849086	-
59	2389532	9933737	2455794	7544206	1733617	9848582	
00	2396702	9933515	2463188	7536812	1736482	9848077	N

60 | 598 | 576 | 55 | 54 | 577 | 55 | 576 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577 | 577

_				3,000.			
M		Co-fine.	Tang.	Co-tan.	Natural Sine.	Natura Co-fine	
	Index 9.	Index 9.	Index 9.	Index 10			- -
0	2396702	9933515	2463188	7536812		984807	7 6
1	2403861	9933292	2470509	7529431	-		<u></u>
2	2411007					984706	5 5
3		1000 10		7514703			8 5
4		1000	11	7507357			
5	2432374		2499978	7500022		9845541	
6	2439472	9932171	2507301	7492699	1753667	9845031	
78	2446558	9931946	2514612	7485388		9844521	53
	2453032	9931720			1759395	9844010	52
9	2460695	9931494		7470800	1762258	9843498	51
0	2467746	9931268	2536477	7463523	1765121	9842985	
11	2474784	9931041	2543742	7456257	1767984	9842471	
2	2481811	9930814	2550997	7449003	1770847	9841956	
3	2488827	9930587	2558240	7441760		9841440	
	2495830		2565472	7434528	1776573	9840924	
-1	2502822	9930131	2572692	7427308	1779435	9840407	45
	2509803	9929902	2579901	7420099	1782298	9839889	44
	2516772	9929673	2587099	7412901	1785160	9839370	43
	2523729	9929444	2594285	7405715		9838850	42
- 1	2530675	9929214	2601461	7398539		9838329	41
_	2537609	9928984	2608625	7391375		9837808	40
1		9928753	2615779	7384221		0 00	-
		9928522	2622921	7377079		9836763	
3		9928291	2630053	7369947		9836239	
		9928059		7362827	1805191	9835714	
- 0		9927827	2644283	7355717	1808052	9835189	35
6 2	2578977	9927595	2651382	7348618		9834663	
7 2	2585832		2658470	7341530	1813774		
8 2		9927129	2665547	7334453	1816635	9833608	32
2	599509	9926895	2672613	7327387		833079	31
		9926661		7320331		832549	30
10	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.		* ***	
30	2606330	9926661	2679669	7320331	1822355	9832549	30
31	2613141	9926427	2686714	7313286	1825215	9832018	20
32	2619941	9926192	2693749	7306251	1828075	9831487	28
33	2626729	9925957	2700772	7299228	1830935	9830955	27
34	2633507	9925722	2707786	7292214	1833795	9830422	26
35	2640274	9925486	2714788	7285212	1836654	9829888	25
36	2647030	9925250	2721780	7278220	1839513	9829353	24
37	265 3775	9925013	2728762	7271238	1842373	9828817	23
38	2660509	9924776	2735733	7264267	1845232	9828281	22
39	2667232	9924539	2742694	7257306	1848091	9827744	21
40	2673945	9924301	2749644	7250356	1850919	9827206	20
41	2680647	9924063	2756584	7243416	1853808	9826667	10
42	2687338	9923824	2763514	7236486	1856666	9826127	18
43	2694019	9923585	2770434	7229566	1859524	9825587	17
44	2700689	9923346	2777343	7222657	1862382	9825046	16
45	2707348	9923106	2784242	7215758	1865240	9824504	15
46	2713997	9922866	4791130	7208869	1868098	9823961	14
47	2720635	9922626	2798009	7201991	18709;6	9823417	13
48	2727263	9922385	2804878	7195122	1873813	9822872	12
49	2733880	9922144	2811736	7188264		9822327	11
50	2740487	9921902	2818585	7181415	1879527	9821781	10
51	2747083	9921660	2825423	7174577	1882384	9821234	-
52		9921418	2832251	7167749	1885241	982.686	2
53		9921175	2839069	7160930	1888098	9820137	1
54	2766811	9920932	2845878	7154122	1890954	9819587	1
55	2773366	9920689	2852677	7147323	1893811	9819036	1
56		9920445	285946	7140534	1896667	9818485	-
57	2786445	9920201	2866245	7133755	1899523	9817933	1
58	1 . 2 . 1 .	9919956	2873014	7126986	1902379	9817380	1
59	1	9919711	2879773	7120227	1905234	9816826	1
60		9919466	2886523	7113477	1908090	9816271	(
	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	N

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11 Degrees.

_				200.			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natura Co-fine	1
	Index 9.	Index 9.	Index 9.	Index 10	_	-	- -
0		8 9919466				981627	16
1	281248		289326		_	/	7 -
2	281896					981516	6 5
3	2825441		2906713	709328			3 5
4	2831909	9918480	2913424	7086576	1919510		
_5	2838359	9918233	2920126	7079874	1922369		
6	284480	9917986	2926817	7073183	1925220		- 21
7	2851237		2933500	7066500	1928074		
8	2857661	9917489	2940172		1930928		
9	2864076	9917240	2946836				
10	Chiarman and Chiar	9916991	2953489	7046511	1936636		
11	2876875		2960134	7039866	1939490	9810116	
12	2883260	9916492	2966769	7033231	1942344	9809551	
13		9916241	2973395	7026605	1945197	9808986	47
14	2896001	9915990	2980011	7019989	1948050	9808420	46
15	2902357	9915739	2986618	7013382	1950903	9807853	45
	2908704		2993216	7006784	1953756	9807285	
		9915236	2999804	7000196	1956609	9806716	
	2921367	9914984	3006383	6993617	1959461	9806146	42
	2927685	9914731	3012954	6987046	1962314	9805576	41
-1	2933993	9914478	3019514	6980486	1965166	9805005	40
	2940291	9914225	3026066	6973934	1968018	9804433	39
	2946580			6967391	1970870	9803860	38
~	2952859	9913717	3039143	6960857	1973722	9803286	37
			3045667	6954333	1976573		36
				6947817	1979425	9802136	35
				6941311	1982276	9801560	34
	2977883			6934813			33
				6928325			32
-				6921845			31
			3084626	6915374			30
10	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

II Degrees.

M	Sine.	Co-fine.	Tang.	Co tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			-
30	2996553	2911927	3084626	6915374	1993679	9799247	30
31	3002758	9911670	3091088	6908912	1996530	9798657	29
32	3008953	9911412	3097541	6902459	1999380	9798086	28
33	3015140		3103985	6896015	2002230		27
34	3021317	9910896	3110421	6889579	2005080	9796921	26
35	3027485	9910637	3116848	6883152	2007930	9796137	25
36	3033644	9910378	3123266	6876734	2010779	9795752	24
37	3039794	9910119	3129675	6870325	2013629	9795167	23
38	3045934	9909859	3136076	6863924	2016478	9794581	22
39	3052066	9909598	3142468	6857532	2019327	9793994	21
40	3058189	9909338	3148851	6851149	2022176	9793406	20
41	3054303	9909077	3155226	6844774	2025024	9792817	19
	3070407	9908815	3161592	6838408	2027873	9792228	18
43	3076503	9908553	3167950	6832050	2030721	9791638	17
44	3082590	9908291	3174299	6825701	2033569	9791047	16
45	3088668	9908029	3180640	6819360	2036417	9790455	15
46	3094737	9907766	3180972	6813028	2039265	9789862	14
47	3100798	9907502	3193295	6806705	2042113	9789268	13
	3106849	9907239	3199611	6800389	2044961	9788674	12
	3112892	9906974	3205918	6794082	2047808	9788079	11
50	2118926	9906710	3212216	6787784	2050655	9787483	10
	3124951	9906445	3218506	6781494	2053502	9786886	.9
	3130968	9906180	3224788	6775212	2056349	9786288	8
	3136976		3231061	6768939	2059195	9785689	7
	3142975	9905648	3237327	6762674	2062042	9785090	6
55	3148965	9905382	3243584	6756416		9784490	5
56	3154947	9905115	3249832	6750168	2067734	9783889	4
57 58	3160921	9904848	3256073	6743927	2070580	9783287	3
	3166885	9904580	3262305	6737695	2073426	9782684	2
59 60	3172841	9904312	3268529	6731471	2076271	9782080	1
_	Co-fine.	9904044 Sine.	3274745 Co-tan.	6725255 Tang.	2079117 Nat. Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			1
0	3178789	9904044	3274745	6725255	2079117	9781476	60
1	3184728	9903775	3280955	6719047	2081962	9780871	50
2	3190659	9903506	3287153	6712847	2084807	9780265	58
3	3196581	9903237	3293345	6706655	2087652	9779658	
4	3202495	9902967	3299528	6700472	2090497	9779050	50
6	3208400	9902697	3305704	6694296	2093341	9778441	55
6	3214297	9902426	3311872	6688128	2096186	9777832	54
7	3220186	9902155	3318031	6681969	2099030		53
8	3226066	9901883	3324183	6675816	2101874	9776611	52
9	3231938		3330327	6669673	2104718	9775999	51
10	3237802	9901339	3336463	6663537	2107561	9775386	50
11	3243657	9901067	3342591	6657409	2110405	9774773	49
12	3249505	9900794	3348711	6651289	2113248	9774159	48
13	3255344		3354823		2116091	9773544	47
14	3261174	9900247	3360927	6639073	2118934	9772928	
15	3266997	9899973	3367024	-	2121777	9772311	45
16	3272811	9899698	3373113	6626887	2124619	9771693	44
17	3278617	9899423	3379194	6620806	2127462	9771074	43
18	3284416	9899148	3385267	6614733	2130304	9770456	42
19	3290206	9893873	3391333	6608667	2133146	9769836	41
20	3295988	9898597	3397391	6602609	2135988	9769215	40
21		9898320	3403441	6596559	2138829	9768593	39
22		9898043	3409+84		2141671		38
23		9897766		6584481	2144512	9767347	37
24		9897489		6578454	2147353	9766723	36
25	3324777	9897211	3427565	6572434	2150194	9766098	-
26		9896932	3433578		2153035	9765472	34
27		9896654	3439583		2155876	9764845	33
28		9896374		6554420	2158716	9764217	32
-		9896095	3451570	6548430	2161556	9763589	
30	3353368	9895815	3457552	6542448	2164396	9762960	-
	Co-ine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			_
30	3353368	9895815	3457552	6542448	2164396	9762960	30
31	3359062	9895535	3463527	6536473	2167236	9762330	29
32	3364749	9895254	3469494	6530506	2170076		28
33	3370428	9894973	3475455	6524546	2172915	9761067	27
34	3376099	9894692	3481407	6518593	2175754	9760435	26
35	3381762	9894410	3487352	6512648	2178593	9759802	25
36	3387418	9894128	3493290	6506710	2181432	9759168	24
37	3393065	9893845	3499220	6500780	2184271	9758533	23
38	3398706	9893562	3505143	6494857	2187110	9757897	22
39	3404338	9893279	3511059	6488941	2189948	9757260	21
40	3409963	9892995	3516968	6483032	2192786	9756623	20
41	3415580	9892711	3522869	6477131	2195624	9755985	19
42	3421190	9892427	3528763	6471237	2198462	9755346	18
43	3426792	9892142	3534650	6465350	2201300	9754706	17
44	3432386	9891856	3540530	6459470	2204137	9754065	16
45	3437973	9891571	3546402	6453598	2206974	9753423	15
46	3443552	9891285	3552267	6447733	2209811	9752781	14
47	3449124	389c998	3558126	6441874	2212648	9752138	13
48	3454688	9890711	3563977	6436023	2215485	9751494	12
49	3460245	9890424	3569821	6430179	2218321	9750849	11
50	3465794	9890137	3575658	6424342	2221158	9750203	10
51	3471336	9889849	3581487	6418513	2223994	9749556	9
52	3476870	9889560	3587310	6412690	2226830	9748909	8
53	3482397	9889271	3593126	6406874	2229666	9748261	7
54	3487917	9888982	3598935	6401065	2232501	9747612	6
55	3493429	9888693	3604736	6395264	2235337	97+6962	_5
56	3498934	9888403	3610531	6389469	2238172	9746311	4
57	3504432	9888113	3616319	6383681	2241007	9745660	3
	3509922	9887822	3622100	6377900	2243841	9745008	2
-	3515405		3627874	6372126	2246676	9744355	li
60	3520880	9887239	3633641	6366359	2249511	9743701	0
_	Co-ine.	Sine.	Co-tan.	Tang.		Nat. Si.	M

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M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	4
-	Index 9.	Index 9.	Index 9.	Index 10.		-	
30	3681853	9878315	3803537	6196463	2334454	9723699	30
31	3687111	9878012	3809100	6190900	2337282	9723019	29
32	3692363		3814655	6185345	2340110	9722339	28
33	3697608		3820205	6179795	2342938	9721658	27
34	3702847	9877099	3825748	6174252	2345766	9720976	26
35	3708079	9876794	3831285	6168715	2348594	9720293	25
<u>36</u>	3713304	9876488	3836816	6163184	2351421	9719609	24
37	3718523	9876183	3842340	6157660	2354248	9718925	2
38		9875876	3847858	6152142	2357075	9718240	22
39	3728940	9875570		6146630	2359902	9717554	21
40	3734139	9875263	3858876	6141124	2362729	9716867	20
41	3739331	9874955	3864376	6135624	2305555	9716179	10
42		9874648	3869869	6130131	2368381	9715491	18
43	3749696		3875356	6124644	2371207	9714802	17
44	3754868	9874031	3880837	6119163	2374033	9714112	16
45	3760034	9873722	3886312	6113688	2376859	9713421	13
46	3765194	9873413	3891781	6108219	2379684	9712729	14
47	3770347	9873103	3897244	6102756		9712036	1
48	3775493		3902700	6097300	2385335	9711343	1
49	0 1		3908151	6091849	2388159	9710649	1
50		9872171	3913595	6086405	2390984	9709954	10
51		9871860	3919034	6080966	2393808	9709258	-
52		9871549	3924466	6075534	2396633	9708561	1
53	1		3929893	6070107	2399457	9707863	
54	1	9870924	3935313	6064687	2402280	9707165	1
55		9870611	3940727	6:59273	2405104	9706465	
56			3946136	605 3864	2407927	9705765	1
57		9869984	3951538	6048462	2410751	9705065	
58		9869670	3956935	6043065	2413574	9704363	
59		9869356	3962326	6037674	2416396	9703660	
	3836752	9869041	3967711	6032289	2419219	9702957	
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	N

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.	7 2 1/4 1		ŀ
0	3836752	9869041	3967711	6032289	2419219	9702957	6
1	3841815	9868726	3973089	6026911	2422041	9702253	l
2	3846873	9868410	3978463	6021537			ľ
3	3851924		3983830		2427685	9700842	
4	3856969	9867778	3989191	6010809	2430507	9700135	
5	3862008	9867461	3994547	6005453	2433329	9699428	5
6	3867040	9867144	3999896		2436150	9698720	15
7	3872067	9866827	4005240		2438971		15
8	3877087	9866509	4010578	100 01	2441792		
9	3882101	9866191	4015910		2444613	9696590	
10	3887109	9865872	4021237	5978763	2447433	9695879	15
11	3892111	9865553	4026558		2450254	9695167	4
12	3897106	9865233	4031873		2453074	9694454	4
13	3902096	9864913	4037182	5962818	2455894		
14	3907079	9864593	4042486	5957514	2458713		
15	3912057	9864273	4047784	5952216	2461533	9692309	
16	3917028	9863952	4053076	5946924	2464352	9691592	
17	3921993	9863630	4058363		2467171	9690875	
18	3926952	9863308		5936356	2469990		п.
19	3931905	9862986		5931081	2472809	9689438 9688718	4
20	3936852		4074189	-	2475627		I-
21	3941794	9862340	4079453		2478445	9687998	
22	3946729	9862017	4084712	20 0	2481263		
23	3951658	9861693	4089965	5910035	2484081	9686555 9685832	3
24	3956581	9861045	4095212	5904788	2486899	9685108	
_							-
26	3966410	9860720	4105690	5894310	2492533		
7	3971315	9860394	4110921	5889079 5883854	2495350		3
	3981109	9859742	4121366	5878634	2498167		
-	3985996	9859416	4126581	5873419	2503800	0681476	2
0	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	

1	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
0	3985996	9859416	4126581	5873419	2503800	9681476	30
-1	3990878	9859089	4131789	5868211	2506616	9680747	20
2	3995754	9858762	4136993	5863007	2509432	9680018	2
3	4000625	9858434	4142191	5857809	2512248	9679288	2
4	4005489	9858106	4147383	5852617	2515063	9678557	2
5	4010348	9857777	4152570	5847430	2517879	9677825	2
6	4015201	9857449	4157752	5842248	2520694	9677092	2.
7	4020048	9857119	4162928	5837072	2523508	9676358	2
8	4024889	9856790	4168099	5831901	2526323	9675623	2
9	4029724	9856460	4173265	5826735	2529137	9674888	2
0	4034554	9856129	4178425	5821575	2531952	9674152	2
1	4039378	9855798	4183580	5816420	2534766	9673415	1
2	4044196	9855467	4188729	5811271	2537579	9672677	1
3	4049009	9855135	4193874	5806126	2540393	9671938	1
	4053816	9854803	4199013	5800987	2543206	9671199	1
5	4058617	9854471	4204146	5705854	2546019	9670459	1
6	4063413	9854138	4200275	5790725	2548832	9669718	ī
7	4068203	9853805	4214398	5785602	2551645	9668976	:
8	4072987	9853471	4219515	5780485	2554458	9668233	1
9	4077766	9853138	4224628	5775372	2557270	9667490	1
0	4082539	9852803	4229735	5770265	2560082	9666746	1
1	4087306	9852468	4234838	5765162	2562894	9666001	-
2	4092068	9852133	4239935	5760065	2565705	9665255	9
3	4096824	9851798	4245026	5754974	2568517	9664508	
4	4101575	9851462	4250113	5749887	2571328	9663760	8
5	4106320	9851125	4255194	5744806	2574139	9663012	4
6	4111050	9850789	4260271	5739729	2576950	9662263	40-
7	4115793	700	4265342	5734658	2579760	9661513	
8	4120522	9850114	4270408	5729592	2582570	9660762	3
9	4125245	9849776	4275469	5724532	2585381	9660010	100
	4129962	9849438	4280525	5719475	2588190	9659258	9
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	N

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10			1
0	4129962	9849438	4280525	5719475	2588190	9659258	60
1	4134674	9849099	4285575	5714425	2591000	9658505	150
2	4139381	9848760	4290621	5709379	2593810		51
3	4144082	9848420	4295661	5704339	2596619		
4	4148778	9848081	4300697	5699303	2599428	9656240	50
5	4153468	9847740	4305727	5694273	2602237	9655483	5
6	4158152	9847400	4310753	5689247	2605045	9654726	54
7	4162832	9847059	4315773	5684227		9653968	
8	4167506	9846717	4320789	5679211		9653209	
9	4172174	9846375	4325799	5674201	2613469		
10	4176837	9846033	4330804	5669196	2616277	965 1688	50
11	4181495	9845690	4335805	5664195	2619085	9650927	40
12	4186148		4340800	5659200	2621892		4
13	4190795	9845004	4345791	5654209	2624699		4
14	4195436	9844660	4350776	5649224		9648638	40
15	4200073	9844316	4355757	5644243	2630312	9647873	4
16	4204704	9843971	4360733	5639267	2633118	9647107	44
17	4209330	9843626	4365704	5634296	2635924	9646341	4
81	4213950	9843281	4370670	5629330	2638730		4
19	4218566	9842935	4375631	5624369	2641536	9644806	4
20	4223176	9842589	4380587	5619413	2644342	9614037	40
21	4227780	9842242	4385538	5614462	2647147	9643267	39
22	4232380	9841895	4390485	5609515	2649952	9642497	38
23	4236974	9841548		5604574	2652757	9641726	37
24	4241563	9841200	4400363	5599637	2655561	9640954	36
25	4246147	9840852	4405295	5594705	2658365	9640181	35
26	4250726	9840503	4410222	5589778	2661169	9639407	34
27	4255299	9840154		5584855	2663973		33
28	4259867	9839805	4420062	5579938	2666777		32
29	4264430	9839455	4424975	5575025	2669581	9537082	31
30	4258988	9839105	4429883	5570117	2672384	9630305 Nat. Si.	30

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
_	Index 9.	Index 9.	Index 9.	index 10.		Toron San	-
30	4268988	9839105	4429883	5570117	2672384	9636305	30
31	4273541	9838755	4434786	5565214	2075187	9635527	29
32	4278089	9838404	4439685	5560315		9634748	28
33		9838052	4444579	1	2680792	9633969	27
34	4287169	9837701	4449468			9633189	26
35	4291701	9837348	4454352	5545648	2686396	9632408	25
36	4296228	9836996		5540768	2689198	9631626	24
37		9836643	4464107	10000 10		9630843	23
	4305267	9836290		5531022	2694801	9630059	22
39	4309779	9835936	4473843	5526157	2697602	9629275	21
10	4314286	9835582	4478704	5521296	2700403	9628490	20
11	4318788	9835227	4483561	5516439	2703204	9627704	19
•	4323285	9834872		5511587	2706004	9626917	18
	4327777	9834517	4493260		2708805	9626130	17
	4332264	9834161	4498102		2711605	9625342	16
	The second second	9833805	4502940	5497060	2714404	9624553	15
		9833449	4507774	5492226	2717204	9623763	14
	4345694	9833092		5487398	2720003	9622972	13
	4350161	9832735	4517427	5482573	2722802		12
9	4354623	9832377	4522246	5477754	2725601	9621387	11
- 1		9832019	4527061	5472939		9620594	10
		9831661	4531872	5468128		9619800	9
		9831302		5463322		9619005	8
		9830942	4541479			9618209	76
		9830583		5453724		9617413	
-1.		9830223	4551069	5448931		9616616	5
		9829862		5444143		9615818	4
		9829501	4560641			9615019	3
		9829140	4565420			9614219	2
		9828778	4570194	7		9613418	1
	Co-fine.	Sine.	4574964 Co-tan.	Tang.	2756374	9612617	o M

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16 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.	1000000		-
0	4403381	9828416	4574964	5425036	2756374	9612617	60
1	4407784	9828054	4579730	5420270	2759170	9611815	59
2	4412182	9827691	4584491	5415509	2761965		58
3		9827328	4589248		2764761		57
4	4420965	9826964	4594001	5405999	2767556		56
5		9826600	4598749	5401251	2770352		5
6	4429728	9826236	4603492	5396508	2773147	9607792	54
7	4434103	9825871	4608232		2775941	9606985	53
8		9825506	4612967	5387033	2778736		52
9		9825140	4617697	5382303	2781530		51
10	4447197	-	4622423	5377577	2784324	9604558	50
L		9824498		5372855	2787118	9603748	49
12	4455904		4631863	5368137	2789911		48
13	4460250		4636576		2792704		47
4	4464591	9823306	4641285	5358715	2795497	9601312	
5	4468927	9822938	4645990	5354010	2798290	9600498	45
6	4473259	9822569	4650690		2801083	9599684	44
7	4477586	9822201	4655386	5344614	2803875	9598869	
18			4660078			9598053	42
9	4486227	9821462	4664765	5335235		9597236	41
0	4490540	9821092	4669448	5330552	2812251	9596418	40
15	4494849	9820721	4674127	5325873	2815042	9595600	39
22	4499153	9820351	4678802	5321198		9594781	38
3		9819979	4683473	5316527	2820624		37
4	4507747	9819608	4688139	5311861	2823415	9593140	
5	4512037	9819236	-	5307199			35
:6		9818863		5302541	2828995		34
7		9818490		5297888	2831785	9590672	33
8		9818117		5293238	2834575	9589023	32
9	4529151	9817744	4711407	5288593		9588197	30
0	4533418 Co-fine.	9817370 Sine.	4716048 Co-tan.	5283952 Tang.	2840153 Nat.Co.		-

N	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
0	- 0	9817370	4716048	5283952	2840153	9588197	30
1	4537681	9816995	4720685	5279315	2842942	9587370	20
2	2002 2 4 6/2/	9816620	4725318	5274682	2845731	9586543	2
3	4546192		4729947	5270053		9585715	2
4	4550441	9815870	4734571	5265428	2851308	9584886	2
5	4554686	9815494	4739192	5260808	2854096	9584056	2
6	4558926		4743808	5256192	2856884	9583225	2
7	4562161	9814740		5251579	2859671	9582394	2
8	4567302	9814363	4753029	5246971	2862458		2
9	/ n	9813986		5242367	2865245	9580729	2
0	4575840	9813608	4762233	5237767	2868032	9579895	2
1	4580058		4766829	5233171	2870819	9579060	1
		9812850		5228579	2873605	9578225	1
- 1		9812471	4776009	5223991	2876391	9577389	Ì
3	4592684		4780592	5219408	2879177	9576552	1
5	100		4785172	5214828	2881953	9575714	1
			4789748	5210251	2884748	9574875	ī
6	4601079	9811331		5205681	2887533	9574035	i
7				5201113	2890318	9573195	î
8			4803451	5196549		9572354	î
9	4613638		4808011	5191989	2895887	9571512	1
0	100		1'		2898671		-
1	4621989	9809423	4812566		2901455	9570669	1
2	4626158		4817118		2904239	9568981	
3	4630323	9808657	4826210	5173790	2907022	9568136	
4	4634483		4830750	5169250	2909805	9567290	
5.						-	-
6	4642790	9807505	4835286	5164714	2912588	9566443	
70	4646938		4839818	5160182	2915371	9565595	
8	4651081	9806735	4844346	5155654	2918153	9564747	
9	4055219	9806349	4848870	5151130	2920935	9563898	
V	4659353	9805963	4853390	5 40010	2923717	9503040	I

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17 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-sine.	
_	Index 9.	Index 9.	Index 9.	Index 10.			-
0	4659353	9805963	4853390	5146610	2923717	9563048	60
1	4663483	9805577	4857907	5142093	2926499	9562197	59
2		9805190	4862419	5137581	2929280		58
3	4671730	9804803	4866928			100	57
4		9804415	4871433		2934842		50
5		9804027	4875933	5124067	2937623	9558785	5
6		9803639	4880430	5119570	2940403		54
7		9803250	4884924		2943183		53
8	4692273	9802860		5110587	2945963		5
.9		9802471		5106102			5
10	11	9802081		5101620	2951522	9554502	50
11	4704548	9801690		5097142	2954301	9553643	49
12	4708631	9801299		5092668	2957080		48
-	4712710	9800908		5088198		9551922	47
14			4916269		2962638	9551001	46
15		9800124		5079269	2965416		4
16		9799732		5074810	2968194		4
17		9799339		5070354	2970971		4
18		9798946		5065903	2973749		4
19		9798552		5061455		9546742	4
20		9798158	4942988		2979303		40
21		9797764		5052571		9545009	39
22		9797369		5048135		9544141	38
23		9796973		5043702		9543272	37
24		9796578	4960727			9542403	30
25	4761334	9796182	4965152		2993184		34
26		9795785		5030426	2995959		34
27		9795388	4973991		2998734		3:
28		9794991		5021594			3:
29 30	4777409	9794593	4982816	5017184	3004284		3
20	4/01410	9794195	1490/223	5012777	1 4007050	1953/109	13

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			
30	4781418	9794195	4987223	5012777	3007058	9537169	30
31	4785423	9793795	4991626	5008374	3009832	9536294	29
		9793398	4996026	5003974	3012606	9535418	28
33	4793420	9792998	5000422	4999578	3015380	9534541	27
34	4797412	9792599	500 1814	4995186		9533664	26
35	4801401	9792198	5009203	4990797	3020926	9532786	25
36	4805385	9791798	5013588	4986412	3023699	9531907	24
37	4809366	9791397	5017969	4982031	3026471	9531027	23
38	4813342	9790996		4977653	3029244	9530146	22
39	4817315	9790594	5026721	4973279		9529264	21
40	4821283	9790192	5031092	4968908	3034788	9528382	20
41	4825248	9789789	5035459	4964541	3037559	9527499	19
42	4829208	9789386	5039822	4960178		9526615	18
43		9788983	5044182	4955818	3043102	9525730	17
44	4837117		5048538	4951462		9524844	16
45	4841066	9788175	5052891	4947109	3048643	9523958	15
46	4845010	9787770	5057240	4942760	3051413	9523071	14
47		9787365		1938414	3054183	9522183	13
48	4852888	9786960		4934072	3056953	9521294	12
49	4856820	9786554	5070267	4929733	3059723		111
50	4860749	9786148	5074602	4925398	3062492	9519514	10
51	4864674	9785741	5078933	4921067	3065261	9518623	15
52	4868595	9785334	5083261	4916739		9517731	8
5	4872512	9784927	5087586			9516838	
54	4 4876426	9784519		4908093	3073566	9515944	1
5	4880335	9784111	5096224	4903776	3076334	9515049	2
150	4884240	9783702	5100539	4899461	3079102	9514154	
5	4888142		5104849		308186	9513258	3
5	8 4892040	9782883	5109156	4890844	3084636	9512361	
	4895934	9782474	5113460	4886540	308740	9511463	3
6		9782063			3090170	9510565	
	Co-ine.	Sing.	Co-tan.	Tang.	Nat.Co	Nat. Si.	

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18 Degrees.

_	- 1		10 1	regrees.			
М	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.		1	-
0	4899824	9782062	5117760	4882240	3090170	9510565	60
1	4903710	9781653	5122057	4877943	3092936	9509666	50
2	1	9781241		4873649	3095702	9508766	
3	4911471		5130641		3098468	9507865	57
4	4915345	9780418				9506963	
5	4919216	9780006	5139210		3103999	9506060	55
6	4923083	9779593			3106764	9505157	54
7	4926946	9779180					5.3
8	4930806	9778766				9503348	52
9	4934661	9778353	5156309		3115058		51
10	4938513	9777938	5160575	4839425	3117822	9501536	50
11	4942361	9777523	5164838			9500629	49
12	4946205	9777108	5169097	4830903		9499721	48
13	4950047	9776693		4826647	3126112	9498812	47
14	4953883		5177606	4822394	3128875		46
15	4957716	9775860	5181855	4818145	3131638	9496991	45
16	4961545	9775444	5186101	4813899	3134400	9496080	44
17	4965370		5190344	4809656	3137163		43
		9774609	5194583	4805417	3139925		42
19	4973010	9774191	5198819	4801181	3142686	9493341	41
05	4976824	9773772	5203052	4796948	3145448	9492426	40
11	4980635	9773354	5207282	4792718	3148209	9491511	39
		9772934	5211508	4788492	3150969		38
3	4988245	9772515	5215730	4784270			37
		9772095	5219950	4780050	3156490	9488760	36
5	4995840	9771674	5224166	4775834	3159250	9487841	35
	4999633	9771253	5228379	4771621	3162010	9486922	34
		9770832	5232589	4767411		9486002	33
		9770410		4763205	3167529	9485081	32
9/9	5010987	9769988	5240999	4759001	3170288	9484159	31
	5014764	9769566	5245199	4754801	3173047	/	30
10	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M
				0 1	-		-

	1			8			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-sine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	5014764	9769566	5245199	4754801	3173047	9483236	30
11	5018538	9769143	5249395	4750605	3175805	9482313	29
12	5022308	9768720	5253589	746411	3178563	9481389	28
33		9768296	5257779	4742221	3181321	9480464	27
34	5029838	9767872	5201966	4738034	3.84079	9479538	26
35		9767447	5266150	4733850	3186836	9478611	25
	5037353	9767022	5270331	4729009	3189593	9477684	24
37	5041105	9766597	5 274508	4725492	3192350	9476756	23
38	5044853	9766171	5278682	4721318	3195106	9+75827	22
39	5048598	9765745	5282853	4717147	3197863	9474897	21
40	5052339	9765318	5287021	4712979	3200619	9473966	20
41	5056077	9764891	5291180	4708814	3203374	9473035	19
42	5059811	9764464	5295347	4704653	3206130	9472103	18
43	5063542	9764036	5299505	4700495	3208885	9471170	17
44		9763608	5303661	4696339	3211640	9470236	16
45	5070992	9763179	5307813	4692187	3214395	9469301	15
46	5074712	9762750	5311961	4688039	3217149	9468366	14
47	5078428	9762321	5316107	4683893	3219903	9467430	13
48	5082141	9761891	5320250	4679750	3222657	9466493	12
49		9761461	5324389	4675611	3225410	9+65555	11
50	5089556	9761030	5328526	4.671474	3228164	9464616	10
51	5093258	9760599	5332659	4667341	3230917	9463676	9
	5096956	9760167	5336789	4663211	3233070	9462736	8
	5100651	9759736	5340916	4659084	3236422	9461795	7
	5104343	9759303	5345040	4654960		9460853	6
55	5108031	9758870	5349161	4650839	3241926	9459910	5
56	5111716	9758437	5353278	4646722	3244678	9458967	5
57		9758934	5357393	4642607	3247429	9458023	3
58	5119074	9757570	5361505	4638495	3250180	9457078	2
59	5122749	9757135	5365613	4634387	3252931	9456132	1
		9756701	5369719	4630281	3255682	9455185	0
-	Co-fine.	Sine.	Co-tan.	. Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			
0	5126419	9756701	5369719	4630281	3255682	9455185	6
1	5130086	9756265	5373821	4626179	3258432	9454238	5
2	5133750	9755830	5377920	4622080		9453290	1-
3	5137410	9755394	5382017	4617983	3263931		5
4	5141067	9754957	5386110	4613890		9451391	5
5	5144721	9754521	5390200	4609800		9450440	-
6	5148371	9754083	5394287	4605713		9449489	1 -
7		9753646		4601629	3274928		5
8	5155660	9753208	5402453			9447584	
9		9752769		4593469		9446630	
_		9752330		-	3283172		5
11	5166569	9751891	5414678	4585322	3285919		14
12	5170198	9751451	5418747	4581253		9443764	
13	5173824	9751011	5422813	4577187		9442807	
	5177447	9750570	5420077	4573123		9440890	4
15		9750129		4569063	_		1-
16	5184682	9749688	5434994	4565006	3299652		1
17	5188295	9749246	5439048	4560952	3302398	9438010	4
18	5191904	9748804	5443100	4552852		9437048	
	5195510		5447148	4548807		9436085	1
20		9747918					3
15		9747475	5455236		3313379 3316123	9434157	3
22	5200307	9747031	5459276			9433192	1.
23		9746587	5467346			9432226	
	5213400	9746142	5471377	4528623	3324355	9+31260	
25				-		9433293	3
26		9745252		4524595		9429325	
27		9744806			3332584		1
28		9744359	5487471	4512529	3335327	100	
30	5234953	9743913			3338069	9426415	3

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	5234953	9743466	5491487	4508513	3338069	9426415	30
31	5238518	9743018	5495500	4504500	3340810	9425443	29
		9742570		4500489	3343552	9424471	28
13		9742122	5503519	4496481	3346293	9423498	27
34	5249196	9741673	5507523	4492477		9422524	26
35	5252749	9741224	5511525	4488475	3351775	9421550	25
36	5256298	9740774	5515524	4484476	3354516	9420575	24
37	5259844	9740324	5519521	4480479	3357256	9419599	23
38	5263387	9739873	5523514	4476486	3359996	9418622	22
39	5266927	9739422	5527504	4472496	3362735	9417644	21
40	5270463	9738971	5531492	4468508	3365475	9416665	20
41	5273997	9738519	5535477	4464523	3368214	9415685	19
42	5277526	9738067	5539459	4460541	3370953	9414705	18
43	5281053	9737615	5543438	4456562		9413724	17
44		9737162	5547415	4452585		9412742	16
45	5288097	9736709	5551388	4448612	3379167	9411760	15
46	5291614	9736255	5555359	4444641	3381905	9410777	14
47	5295128	9735801	5559327	4440673		9409793	1
48		9735349	5563292	4436708		9408808	1:
49	5302146	9734891	5567255	4432745		9407822	11
50	5305650	9734435	5571214	4428786	3392853	9406835	10
21	5309151	9733980	5575171	4424829	3395589	9405848	8
52	5312649	9733523	5579125	4420875	3398325		
53	5316143	9733067	5583077	4416923	3401060	9403871	1
54	1	9732610	5587025	4412975	3403795	9402881	
55	5323123	9732152	5590971	4409029	3406530	9401890	5
56	5326608	9731694	5594914	4405086	3409265	9400899	4
57	5330090	9731236	5598854	4401146	3412000	9399907	3
58	5333569	9730777	5602792	4397208	3414734	9398914	2
		9730318	5606727	4393273		9397920	1
60	127407.	9729858	5610659	4389341	3420202	9396926	9
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

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20 Degrees. Co-fine. Tang. M Sine. Co-tan. Natural Natural Sine. Co-fine. Index 10. Index 9. Index 9. Index 9. 5610658 4389341 9729858 5340517 3420202 9396926 5343986 9729398 5614588 4385412 3422935 9395931 59 9394935 58 5618515 4381485 9728938 5347452 3425658 3 5350915 9728477 5622439 3428 01 9393938 4377561 5354375 9728016 5626360 4373640 3431133 9392940 56 5357832 9727554 5630278 4369722 3433865 5361286 9727092 5634194 4365806 3436597 9390943 54 5364737 9726629 5638107 4361893 3439329 9389943 53 8 5 3 6 8 1 8 4 9 7 2 6 1 6 6 5 6 4 2 0 1 8 4 3 5 7 9 8 2 3 4 4 2 0 6 0 9 3 8 8 9 4 2 9 537 1628 9725703 5645925 4354075 3444791 9387940 51 4350169 5375070 9725239 5649831 3447522 9386937 50 5378508 9724775 5653733 4346267 3450252 9385934 12 5381943 9724310 5657633 4342367 3452982 9384930 48 13 5385375 9723845 5661530 4338470 3455712 9383925 47 14 5388804 9723380 5665424 4334576 3458442 9382919 46 15 5392230 9722914 5669316 4330684 3461171 9381913 45 5673205 4326795 3463900 9380906 16 5395653 9722448 17 5399073 9721981 5677091 4322909 3466629 9379898 43 18 5402489 9721514 5680975 4319025 3469357 9378889 42 5684856 4315144 3472085 9377879 41 5405903 9721047 19 5409314 9720579 5688735 4311265 3474813 9376869 20 21 5412721 9720110 5692611 4307389 3477540 9375858 39 5696484 4303516 22 5416126 9719642 3480267 9374846 38 3482994 9373833 37 23 5419527 9719172 5700355 4299645 5422926 9718703 5704223 4295777 3485721 9372819 36 24 5708088 4291912 3488447 9371805 35 5426321 9718233 25 5429713 9717762 5711951 4288049 3491173 9370790 34 26 5715811 4284189 3493899 9369774 33 27 5433103 9717291 28 5436489 97 16820 5719669 4280331 3496624 9368757 32 29 5439873 9716348 5723524 4276476 3499349 9367740 31 5443253 9715876 4272623 3502074 9366722 30 5727377 30 Nat. Co. | Nat. Si. M Co-tan. Co-fine. Sine. Tang.

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M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
_	Index 9.	Index 9.	Index 9.	Index 10.		Dir beto	1
30	5443253	9715876	5727377	4272623	3502074	9366722	130
31	5446630	9715405	5731227	4268773	3504799	9365703	20
			5735074	4264926	3507523		28
33	5453376		5738919		3510247	9363662	27
34	5456745		5742761		3512970	9362640	20
35	5460110	9713509	5746601	4253399	3515693	9361618	25
36	5463472		5750438	1249562	3518416	9360595	24
37	5466832		5754272		3521139		23
	5470189		5758104		3523862		22
	5473542		5761934	4238066	1 - 2 1		21
40	5476893	9711132	5765761	4234239	3529306	9356495	20
41		9710655	5769585	4230415	3532027	9355468	19
	5483585	9719178		4226593	3534748		18
	5486927	9709701	5777226		3537469		17
- 1	5490266		5781043	4218957	3540190		16
45	5493602	9708744	5784858	4215142	3542910	9351352	15
	5496935	9708205	5788669	4211331		9350321	14
	5500265	9707786	5792479	4207521	3548350		13
		9707306		4203714	3551070		12
		9706826		4199910	3553789		11
_	5510237	9706346		4196108		9346189	10
		9705865		4192309		9345154	9
		9705383			3561944	9344118	8
		9704902			3564662		7
	10	9704419			3567380	9342045	
71		9703937	5822864	4177136	3570097	9341007	_5
- 1		9703454		4173349		9339968	4
		9702970	5830435		3575531		3
		9702486	5834217			9337887	2
		9702002	5837997	4162003		9336846	I
-1	5543292 Co-fine.	9701517	58+1774	4158226	-	933;804	0
- 11	co-une.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

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М	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			-
0	5543292	9701517	5841774	4158226	3583679	9335804	60
1	5546581	9701032	5845549	4154451	3586395		
2		9700547	5849321	4150679	3589110	9333717	58
3		9700061	5853091		3591825		57
4	5556433	9699574	5856859	4143141	3594540		10
5	5559711	9699087	5860624	4139376	35972:4		2.
6	5562987	9598600	5864386	4135614	3599968	0 0	10.
7	5566259	9698112	5868147	4131853	3602682		
8		9697624	5871904	4128096	3605 395		52
9		9697136 9696647	5875660	4124340	3608108		
10	-						-
11	5579321	9696158	5883163	4116837	3613533		
12	5582579	9695668	5886912	4113088	3616246		
13	5585835	9695177 9694687	5894401	4105599	3618958	9322180	
14	5589088	9694196	5898142	4105599		9321133	
16				4098119			-
17	5595585	9693704	5901881 5905617	4098119	3627091	10	
18			5905017		3632512		
19		9692720	5913082	4086918	3635222		
20		9691734	5916812	4083188	3637932		
21		9691734	5920539	4079461	3640641		-
21		9690746	5924263	4075737	3643350		
23	5618237	9690252		4072015	3646059		
24			5931705	4068295	3648768		
25		9689262	5935423	4064577	3651476		
26		9688766	5939138	4060862	3654184	9308433	34
27	5631121		5942851	4057149	3656892		1.
28	5634335	9687773	5946561	4053439	3659599	9306306	
29		9687276	5950269		3662306		31
30	5640754	9686779		4046025	3665013	9304175	
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.		1

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M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	5640754	96867.9	5953975	4046025	3665013	9304175	30
31	5643960	9686281	5957679	4042321		9303109	29
32	5647163	9685783		4038620		9302042	28
33	5650363	9685284	5965079	4034921		9300974	27
34	5653561	9684785	5968776	4031224		9299905	26
35	5656756	9684286	5972470	4027530	3678541	9298835	.25
36	5659948	9683786	5976162	4023838	3681246	9297765	24
37	5663137	9683285	5979852	4020148		9296694	23
38		9682784		4016460		9295622	22
22	5669508	9682283	5987225	4012775		9294549	21
40	5672689	9681781	5990908	4009092	3692062	9293475	20
41	5675868	9681279	5994588	4005412	3694765	9292401	19
42	5679044	9680777	5998267	4001733	3697468		18
43	5682217	9680274	6001943	3998057		9290250	17
44	5685387	9679771	6005617	399+383	3702872	00	16
45	5688555	9679267	6009289	3990711	3705574		15
46	5691721	9678763	6012958	3987042	3708276		14
47		9678258	6016625	3983375	3710977	9285938	13
48		9677753		3979710	3713678		12
49		9677247	6023953	3976047	3716379		11
50		9676741	6027613	3972387	3719080	9282696	10
51		9676235	6031271	3968729	3721780	9281014	9
		9675728	6034927	3965073	3724480		
53			6038581		3727179		7 6
54	5716946		6042233		3729878		
55	5720087	9674205	6045882	3954118	3732577	9277277	5
56		9673698	6049529	3950471	3735275	9276191	4
57	5726362	9673188	6053174	3946826	3737973	9275104	3
58	5729495	9672679	6056817	3943183	3740671	9274016	2
59 60		9672169	6060457	3939543	3743369 3746066		1
-	573575,4 Co-fine.	9671659 Sine.	Co-tan.			9271839 Nat. Si.	M

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22 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-sine.	-
	Index 9.	Index 9.	Index 9.	Index 10.			
0	5735754	9671659	6064096	3935904	3746066	9271839	6
1	5738880	9671148	6067732	3932268	3748763	9270749	5
2	5742003	9670637	6071366	3928634	3751459	9269658	
. 3	5745123	9670125	6074997	3925003	3754156		1.
4	5748240	9669614	6078627	3921373		9267473	
.3	5751356	9669101	6082254	-	3759547	9266380	1-
: 6	5754468	9668588	6085880	3914120	3762243	9265286	100
. 7	5757578	9668075	6089503	3910497	3754938		
8	5760685		6093123		3767632		
9		9667048	6096742		3770327	9262000	10
10	5766892	9666533	6100359	38996+1	3773021	9260903	-
11	5769991	9666018		3896027	3775714	9259805	
12	5773088	9665503			3778408		
13	5776183	9664986		3888804		9257606	
14	5779275	966 1471	6114804	3885196	3783794		
15	5782364	9663954	6118409	3881591	3786486		
16	5785450	9563437	6122013	3877987		9254303	
17	5768535	9662920	6125615		3791870		
18	5791616	9662402		3870786			
19	5794695	9661884	6132812	3863593	3797253	9250993	
20	5797772	966136			3799944	9249888	4
21	5800845	9660846	6140000	3860000	3802634	9248782	3
22	5803917	9560326		3856409	3805324	9247675	3
23	5806986	9659285		3852820	3808014		
24	5813116	9658764	6150766	3849234 3845649	3810704	9244351	3
25	201000	1			-		_
26	5816177	9658243	6157934	3842066	3816082	2 10 1	3
27	5819236	9657721		3838486	3818770	2 - 1 - 0	
28	5822292	9657199 9656677	6163669	3834907	3821459	9241020	2
30	5828397	9656153	6172242	3831331	3824147 3826834		3

22	Degrees.
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M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			-
30	5828397	9656153	6172243	3827757	3826834	923879:	3
31	5831445	9655630	6175815	3824185	3829522	9237681	2
32	5834491	9655106	6179385			9236567	2
33	5837535	9654582	6182953				
34	5840576		6186519		3837582	9234336	
35	5843515	9653532	6190083	3809917	3840268		2
36	5846651	9653006	6193645	3806355	3842953	9232102	2
37	5849686		6197205	3802795	3845639	9230984	2
8	5852716	1 2 0 0 0 0	6200762	3799238	3848324		2
19	5855745		6204318	3795682	38;1008	9228745	3
0	5858771	9650899	6207872	3792128	38;3693	9227624	2
1	5861795	9650371	6211423	3788577	3856377	9220503	1
2	5864816	9649843	6214974	3785026	3859060		1
3	5867835	9649314	6218520	3781480	3861744	9224258	1
4	5870851	9648785	6222066	3777934	3864427	9223134	1
5	5873865	9648256	6225609	3774391	3867110	-	1
6	5876876	9547726	6229150		3869792	9220884	1.
	5879885	9647195	6232690	3767310	3872474	9219758	1
8	5882892	9646655	6236227	3763773	3875156	9218631	I
9	5885896 5888897	9646133	6239763	3760237 3756704	3877837	9217503	1
		9645602	6243296			The Control of	10
	5891897	9645069	6246827	3753173		9215246	
	5894893 5897888	9644537	6250356	3749544		9214116	
- 1			6253884	3746116		9211854	
	0.		6257409	374 2591 3739068	0 0 0 0 0	9210722	
-1	-			-		-	-5
-				37355 16		9209589	1
				3732027 3728509		9207320	-
	- 0		6275006	3724991		920618,	-
			6278519	3721481		9205049	0
	Co-tine.		Co-tan.	lang		Nat. Si.	N

			23 D	egrees.			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine,	
	Index 9.	Index 9.	Index 9.	Index 10.		9.104.	-
0	5918780	9640261	6278519	3721481	3907311	9205049	60
I	5921755	9639724	6282031	3717969	3909989	9203912	59
2	5924728	9639187	6285540	3714460	3912666		58
3	5927698	9638650		3710952	3915343	9201635	57
4	5930666	9638112	6292553	3707447		9200496	56
5	5933661	9637574	6296057	3703943	3920695	9199356	55
6	5936594	9637036	6299558	3700442	3923371	9198215	54
7	5939555	9636496	6303058	3696942	3926047	9197073	53
8	5942513	9635957	6306556	3693444	3928722	9195931	52
9	5945469	9635417	6310052	3689948	3931397	9194788	51
10	5948422	9634877	6313545	3686455	3934071	9193644	50
11	5951373	9634336	6317037	3682963	3936745	9192499	49
12	5954322	9633795	6320527	3679473	3939419		48
13	5957268		6324015	3675985	3942093		47
14	5960212	9632711	6327501	3672499	3944766	9189060	46
15	5963154	9632168	6330985	3669015	3947439	9187912	45
16	5966093	9631625	6334468	3665532	3950111	9186763	44
17	5969030	9631082	6337948	3662052	3952783	9185614	
18	5971965	9630538	6341426	3658574	3955455		42
19	5974897	9629994	6344903	3655097	3958127		41
20	5977827	9629449	6348378	3651622	3960798	-	40
21	5980754	9628904	6351850	3648150	3963469	9181008	39
22	5983680	9528358	6355321	3644679	3966139		38
23	5986602	9627812	6358790	3641210	3968809		37
24	5989523	9627265	6362257	3637743	3971479	9177546	
25	5992441	9626719	636:722	3634278	3974148	9176390	35
26	5995357	9626172	6369185	3630815	3976817	9175234	
27	5998270	9625624	6372646	3627354	3979486		33
28	6001181	9625076	6376106	3623894	3982155	9172919	32
29		9624527	6379563	3620437	3984823	9171760	
30	6006997	9623978	6383019	3616981	3987491	9170601	
-	Co-sine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

_	- PET	-	43 D	egrees.			_
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-sine.	
_	Index 9.	Index 9.	Index 9.	Index 10.			
30	6006997	9623978	6383019	3616981	3987491	9170601	30
31	6009901	9623428	6386473	3613527	3990158		29
32		9622878	6389925	3610075	3992825		28
33	6015703	9622328		3606625	3995492		27
34		9621777	6396823	3603177	3998158	9165955	26
35	6021495	9621226	6400269	3599731	3900824	9164791	25
36	6024388	9620674	6403714	3596286	3903490	9163627	24
37		9620122	6407156	3592844	4006156	9162462	23
38	6030166	9619569	6410597	3589403	4008821		22
39	6033052	9619016	6414036	3585964	4011486		21
40	6035936	9618463	6417473	3582527	4014150	9158963	20
41	6038817	9617909	6420908	3579092	4016814	9157795	19
42	6041696	9617355	6424342	3575658	4019478	9156626	18
43		9616800	6427773	3572227	4022141	9155456	17
44	6047448	9616245	6431203	3568797	4024804	9154286	16
45	6050320	9615689	6434631	3565370	4027467	9153115	15
46	6053190	9615133	6438057	3561943	4030129	9151943	14
47	6056057	9614575	6441481	3558519	4032791	9150770	13
48	6058923	9614020	6444903	3555097	4035453	9149596	12
49		9613463	6448324		4038114	9148422	11
50		9612904	6451743	3548257	4040775	9147247	10
51	6067506	9612346	6455160	3544840	4043436		9
52	6070362	9611787	6458575	3541425	4046096		8
53		9611228	6461988	3538012	4048756		7 6
54			6465400	3534600	4051416		
55	-	-	6468810	3531190	4054075	9141361	5
56			6472217	3527783	4056734	9140181	4
57		9608987	6475624		4059393	9139000	3 2
58	1 . / / / /	9608426	1	3520972	4062051	9137819	
59			6482431	3517569	4064709	91 36637	1
60	1_13 33	9607302	6485831	3514169	4067366	9135454	0
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10			-
0	6093133	9607302	6485831	3514169	4067366	9135454	60
1	6095969	9606739	6489230	3510770	4070023	9134271	59
2	6098803	9606176	6492628	3507372		9133087	58
3			6496923		4075337	9131902	57
4	6104465		6499417	3500583	4077993	9130716	56
5	6107293	9604484	6502809	3497191	4080649	9129529	55
6	6110118	9603919		3493801	4083305	9128342	54
7		9603354		3490413	4085960	9127154	53
8	6115762		6512974	3487126		9125965	52
9	6118580		6516359	3483741	4091269	9124775	51
0	6121397	9601655		3480358	4093923	9123584	50
1	6124211	9601088	6523123	3475877	4096577	9122363	49
2	6127023	9600520			4099230		48
13	6129833	9599952		3470119	4101883	9120008	47
14	6132641	9599384		3466743	4104536	9118814	46
5	6135446	9598815	6536631	3463369	4107189	9117620	45
16		9598246	6540004	34599)6	4109841	9116425	44
7.		9597676		3456625	4112493	9115229	43
8	6143850	9597106	6546744	3453256	4115144		42
9	6146647	9596535	6550112	3449888	4117795	9112835	41
0	6149441	9595964	6553477	3446523	4120446	9111637	40
1	6152234	9595393	6556841	3443159	4123096		39
2	6155024	9594821	6560204	3439790		9109238	38
3		9594248	6563564	3436436	4128395		37
4	6160598	9593675	6566923	3433077	4131044		36
5	6163382	9593102	6570280	3429720			35
6	6166164	9592528	6573636	3426364	4136342	9104432	34
7	6168944	9591954	6576989	3423011			33
8	6171721	9591380	6580341	3419659			32
9	6174496	9590805	6583692		4144285		31
0	0177270	9590229	6587041	3412960			30
1	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.		THE STATE OF	1
30	6177270	9590229	6587041	3412960	4146932	9099613	3
11	6180041	9589653	6590387	3409613	4149579	9098406	2
2	6182809	9589077	6593733	3406267	4152226	9097198	
3	6185576		6597076		4154872	9095900	2
4	6188341	9587923	6600418	3399582	4157518	9094781	2
15	6191103	9587345	6603758	3396242	4160163	9093571	2
	6193864	9586767	6607097	3392903	4162808	9092361	2
7	6196622	9586188	6610434	3389566	4165453	9091150	
		9585609	6613769	3386231	4168097	9089938	2
9	6202132	9585030	6617103	3382897	4170741	9088725	Z
0	6204884	9584450	6620434	3379566	4173385	9087511	2
1	6207634	9583869	6623755	3376215	4176028	9086297	1
	6210382	9583288	6627093	3372907	4178671	9085082	1
13	6213127	9582707	6510420	3369580	4181313	9083866	1
		9582125	6633745	3366255	4183955	9082649	1
-	6218612	9581543	6637069	3362931	4186597	9081432	1
6	6221351	9580961	6640391	3359608	4189239	9080214	1
7	6224088	9580378	6643711	3356289	4191880	9078995	1
		9579794	6647030	3352970	4194521	9077775	I
9	6229557	9579210	6650346	3349654	4197161	9076554	1
	6232287	9578626	665 3662	3346338	4199801	9075333	1
1		9578041	6656975	3343025	4202441	9074111	
2	6237743	9577456	6660288	3339712	4205080	9072888	
3		9576870	6663598	3336402	4207719	9071664	1
H		9576284	6666907	3333093	4210358	9070440	
2	64,96	9575697	6670214	3329786	4212996	9069215	-
U	6248629	9575110	6673519	3326481	4215634	9067989	4
8		9574522	6676823	3323177		9066762	3
0		9573934	6680126	3319874		9065535	2
0	64	9573346	6683426	3316574		9064307	. 1
-	Co-fine.	9572757 Sine.	6686725 Co-tan.	3313275 Tang.	4226183 Nat. Co.	9063078 Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-sine.	1
	Index 9.	Index 9.	Index 9.	Index 10.			
0	6259483	9572757	6686725	3313275	4226183	9051078	60
I	6262191	9572168	6690023	3309977	4228819	9061848	59
2		9571578	6693319	3306681	4231455	9060617	58
3		9570988	6696613	3303387	4234090		57
4	6270303	9570397	6699906	3300094	4236725	9058154	56
5	6273003	9 69806	6701197	339680	423,9360	9056921	55
6	6275701	9569215	6706485	3293514	4241994	9055688	54
7	6278397	9568623	6709774		4244628	9054454	53
8		9568030			4247362		
9	6283782	9567437	6716345	3 28 3655	4249895	905 983	51
10	6286472	9566844	6719628	3280372	-	9050746	50
11	6289160	9566250	6722910	3277090	4255161	9049;09	49
12	6291845			3273810		9048271	48
13	6294529		6729468	- 10	4260425		
14	6297211	9564466	6732745	3267255	4263056		46
15	6299890		6736020	3263980		9044551	-
16	6302568	9563274	6739294		4268318	9043310	44
17	6305243		742566				
18	6307917	9562081	6745836		4273579	9040825	42
19	6310589	9561483	6749105	3250895		9039582	
20	6313258	9560886	6752372	3247628	4278838	9038338	40
21	6315926	9550287	6755638	3244362		9037093	39
22	2 37		6758903			9035847	
23		9559089	6762165	1- 0. 00	4286723	9034600	
24	6323916	9558490	6765426	3234574		9033353	36
25	6326576		-	3.3		9032105	-
26	6329233	9557289	6771944	3228056			
27	6331889		6775201				
28		9556087	6778456	3221544	4299859	9027105	
29		9555485	6781709		4302485		
30	6339844	9554882	0/04901	13215039	4305111	9025013	M

И	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
0	6339844	9554882	6784961	3215039	4305111	9025853	30
1	6342491	9554280	6788211	3211789	4307736	9024600	20
	6345137	9553676	6791460	3208540		9023347	28
3		9553073	6794708	3205292	4312986	9022093	27
1		9552469	6797953	3202047	4315610	9020838	26
5	6353062	9551864	6801198	3198802	4318234	9019582	25
6		9551259	6804440	3195560	4320857	9018325	24
17		9550653	6807682	3192318	4323480	9017068	2
8		9550047	6810921	3189079	4326103	9015810	2:
		9549441	6814160	3185840	4328726	9014551	2
0	6366231	9548834	6817396	3182604	4331348	9013291	20
1		9548227	6820632	3179368	4333970	9012031	1
		9547619	6823865	3176135	4336591	9010770	1
		9547011	6827098	3172902	4339212	9009508	17
	6376731	9546402	6830328	3169672	4341833	9008245	1
5	6379351	9545793	6833557	3166443	4344453	9006982	1
6		9545184	6836785	3163215	4347073	9005718	1
7	6184585	9544574	6840011	3159989	4349692	9004453	1
8	6387199	9543963	6843236	3156764	4352311	9003187	1
		9543352	6846459	3153541	4354930	9001921	1
	1	9542741	6849681	3150319	4357548	9000654	10
;;		9542129	6852901	3147099	4360166	8999386	
52			6856120	3143880	4362784	8998117	
53	1	9540904	6859338	3140662	4365401	8996848	
54		9540291	6862552	3137447	4368018	8995578	
55		9539677	6865768	3134232	4370634	8994307	-
56		9539063	6868981	3131019	4373250	8993035	-
57		9538448	6872192	3127808	4375866	8991762	1
58	6413235	9537833	6875402	3124598	4378482	8990489	
59	6415828	9537218	6878611	3121389	4381097	8989215	
60	6418420		6881818	3118182	4383712	8987940	
	Co-tine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	I

M	Sine.	Co-fine.		Co-tan.	Natural Sine.	Natural Co-fine.	-
111	Index 9.	Index 9.	Index 9.	Index 10			1
0	6418420	9536602	6881818	3118182	4383712	8987940	6
I	6421009	9535985	6885023	3114977	4386326	8986665	
2	6423596	9535369	6888227	3111773	4388940		5
3	6426182	9534751	6891430			8984112	
4	6428765	9534134	6894631	3105369	4394166	8982834	5
5	6431347	9533515	6897831	3102169	4396779	8981555	5
6	6433926	9532879	6901030	3098970	4399392	8980276	
7	6436504	9532278	6904226	3095774	4402004	8978996	5
8		9531658	6907422	3092578	4404616	8977715	15
9	6441654	9531038	6910616	3089384	4407227	8976433	
0	6444226	9530418	6913809	3086191	4409838	8975151	15
11	6446796	9529797	6917000	3083000	4412448	8973868	-
	6449365	9529175	6920189		4415058	8972584	
13	1	9528553	6923378		4417668		
14	6454496		6926565	3073435	4420278	1 21 0	
15	6457058	9527308	6929750		4422887	8968727	1-
16	6459619	9526685	6932934		4425496	8967440	
17	6462178	9526061	6936117	3063883	4428104	8966152	
18	6464735	9525437	6939298		4430712		
19	6467290	9524813	6942478		4433320	8963575	
20	6469844	9524188	6945656	3054344	4435927	8962285	1
21	6472395	9523562	6948833	3051167	44385 4	8960994	
22	6474945	9522936	6952009		4441140		
23	6477492	9522310		3044817	4443746	8958411	
24	6480038			3041645	4446352	8957118	
25	6482582	9521055	6961527	3038473	4448957	8955824	
26	6485124	9520428	6964697	3035303	4451562	8954529	
27	6487665	9519799	6967865	3032135	4454167	8953234	
8	6490203	9519176	6971032	3028968	4456771	8951938	
29	6492740	9518541	6974198	3025802	4459375	8950641	
30	6495274	9517912	6977363	3022637	4461978		• 1
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	.1

A	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.	i		4
0	6495274	9517912	6977363	3022637	4461978	8949343	30
•	6497807	9517282	6980526	3019474	4464581	8948045	20
-	6500338	9516651	6983687	3016313	4467184	8946746	2
3	6502868	9516020	6986847	3013153	4469786	8945446	2
	6505395	9515389	6990006	3009994	4472388	8944145	2
5	6507920	9514757	6993164	3006836	4474990	8942844	2
-	6510444	9514124	6996320	3003680	4477591	8941542	2.
	6512966	9513492	6999474	3000526	4480192	8940239	2
7 8	6515486	9512858	7002628	2997372	4482792	8938936	2
	6518004	9512224	7005780	2994220	4485392	8937632	2
	6520521	9511590	7008930	2991070	4487992	8936327	2
-	-	_	7012080	2987920	4490;91	8935021	1
1	6523035	9510956	7015227	2984773	4493190	8933714	i
2	6525548	9509685	7018374	2981626	4495789	8932406	1
*	6530568	9509049	7021519	2978481	4498387	8931098	i
4	6533075	9508412	7024663	2975337	4500985	8929789	I
5	-					8928479	-
6		9507775	7027805	2972195	4503582		1
7	6538084	9507138.	7030946	2969054	4506179	8927169	1
8	11	9506500	7034086	2965914	4508776	8925858	I
9		9505861	7037225	2962775	4511372	8924546	!
0	6545584	9505223	7040362	2959638		8923233	1
1	6548081	9504583	7043497	2956503	45 16563	8921920	1.
2	10	9503944	7046632	2953368	4519158	8920606	
3	1000	9503303	7049765	2950233	4521753	8919291	
4	11	9502663	7052897	2947105	4524347	8917975	-
5		1	7056027	2943973	4526941	8916559	-
6		9501380	7059156	2940844	4529535	8915342	
7		9500738	7062284	2937716	4532128	8914024	1
	6565505	100	7065410	2934599	4534721	8912705	1
9			7068535	2931465	4537313	8911385	1
0	6570468	9498809	7071659	2928341	4539905 Nat. Co.	8910065	1_

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	1
	Index 9.	Index 9.	Index 9.	Inder 10.	1		1
0	6570468	9498809	7071659	2928341	4539905	8910065	6
I	6572946	2498165	7074781	2925219	4542497	8908744	5
2	6575423	9497521	7077902	2922098	4545088	8907422	
3	6577898	9496876	7081022	2918978	4547679	8906100	
4	6580371	9496230	7084141	2915859	4550269	8904777	15
5	6582842	9495585	7087258	2912742	4552859	8903453	15
6	6585312	9494938	7090374	2909626	4555449	8902128	15
7	6587780	9494292	7093483	2906512	4558038	8900802	
8	6560246	9493645	7096601	2903399	4560627	8899476	
9		9492997	7099713	2900287	4563216	8898149	15
0	6595173	9492349	7102824	2897186	4565804	8896821	15
1	6597634	9491700	7105933	2894067	4568392	8895493	4
2	6600093	9491051	7109041	2890959	4570979	8894164	
3	6602550	9490402	7112148	2887852	4573566		4
4		9489752	7115254	2884746	4576153	8891503	4
5	6607459	9489101	7118358	2881642	478739	8890171	1
6	6609911	9488450	7121471	2878539	4581325	8888839	4
7	6612361	9487799	7124562	2875438	4383910	8887507	4
8	6614810	9487147	7127662	2872338	4586495	8886172	4
9	6617257	9486495	7130761	2869239	4589080	8884837	4
0	6619701	9+85842	7133859	2866141	4591664	8883502	4
1	6622145	9 +85 189	7136956	2863044	4594248	8882166	3
2	6624586	9484535	7140051	2859949	4596832	8880829	3
3	6627026	9483881	7143145	2856855	4599415	8879492	3
4		9483227	7146237	2853763	4601998	8878154	3
5	6631900	9482572	7149329	2850671	4604580	8876815	3
6	6634335	9481971	7152419	2847581	4607162	8875475	3
71		9481260	7155508	2844492	4609744		3
8		9480604		2841405	4612325		3
		9479947		2838318			3
0	6644056	9479289		2835233	4617486	8870108	3
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	A

1	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine	Natural Co-fine.	-
-	Index 9.	Index 9.	Index 9.	Index 10.	ALCOHOL MAN		-
0	6644056	9479289	7164767	2835233	4617486	8870108	13
1	6646482	9478631	7167851	2832149	4620066	8863764	2
2	6648906		7170933	2829067	4622646		2
3		9477314	7174014	2825988	4625225	8866075	2
4	6653749	9476655	7177094	2822906	4627804	8864729	2
5	6656168	9475995	7180173	2819827	4630382	8863383	2
6	6658586	9475335	7183251	2816749	4632960	8862036	2
7		9474674	7186327	2813673	4635538	8860688	2
8		9474013	7189402	2810598	4638115	8859339	2
9		9473352	7192476	2807524	4640692	8857989	2
0	6668238		7195549	2804451	4643269	3856639	2
1	6670647	9472027	7198620	2801380	4645845	8855288	ī
2		9471364	7201690	2798309	4648421	8853936	1
3		9470700	7204759	2795241	4650996		1
4		9470036	7207827	2792173	4653571	8851230	1
5		9469372	7210893	2789107	4656145	8849876	1
6	6682665	9468707	7213958	2786042	4658719	8848521	ī
7		9468042	7217022	2782978	4661293	8847166	1
8	6687461	9467376	7220085	2779915	4663866	8845810	1
9		9466710	7223147	2770853	4666439	8844453	1
0	6092250	9466043	7226207	2773793	4669012	8843095	1
1	6694642	9465376	7229206	2770734	4671584	8841730	
2		9464708	7232324	2767676	4674156	8840377	
3		9464040		2764619	4676727	8839017	
4		9463371	7238436	2761564	4679298	8837656	
5		9462702	7241490	2758510	4681859	88 26294	
6	6706576	9462032	7244543	2755457	4684439	8834932	-
		9461362	7247595	2752405	4687009	8833569	
8	6711338	9460692	7250646	2749354	4689578	8832205	1
9	6713716	9460021	7253695	2746305	4692147	8830841	
0		9459349	7256744	2743256	4694716	8829476	

			28 D	egrees.			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	1
1	Index 9.	Index 9.	Index 9.	Index 10.			-
0	6716093	9459349	7256744	2743256	4694716	8829476	6
I	6718468	9458677	7259791	2740209	4697284	8828110	
2	6720841	9458005		2737163		8826743	5
3	6623213	9457332	7265881	2734119	4702419	8825375	15
4	6725583		7268925	2731075	4704986		150
5	6727952			2728033	4707553	8822638	59
6	6730119	9455310	7275008		4710119	8821268	54
7		9454636	7278048		4712685		53
8		9453960		2718913	4715250	8818527	52
9	6737409	9453285	7284124	2715876	4717815		10
10		9452609		2712839	4720380	8815782	50
11	6742128	9451932		2709804	4722944	8814409	49
	6744485				4725508		48
3	6746840		7296263		4728071	8811660	
4		9449899	7299295		4730634		46
5		9449220		2697675	4733197	8808907	45
16	6753896			2694646		8807530	
7	6756245	9447862	7308383	2691617	4738321	8805152	43
8		9447182	7311410	2088590	4740882	8804773	42
9	6760937 6763281	9446501	7314430	2085504	4743443	8803394	41
-		9445821				8802014	40
1	6765623	9445139	7320484				39
- 1	4	9444457	7323506				
3		9443775	7326527				37
4	6772640		7332566		4756242	8790400	36
5	6774975	9442409					35
		9441725	7335584		4761359		34
		9441042	7338601				33
		9440356	7341616		4766474	_ , _ ,	32
		9439071	7347644				31
_	Co-fine.	Sine.					M
1	Co-line.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	TAT

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
_	Index 9.	Index 9.	Index 9.	Index 10.			-
0	6786629	9438985	7347644	2652356	4771588	8788171	3
I	6788955	9438299	7350656	2649344	4774144	8786783	20
2	6791279	9437612	7353667	2646333	4779700	8785394	2
3	6793602		7356677	2643323	4779255	8784004	2
4	6795923	9436238	7359685	2640315	4781810	8782613	2
5	6798243	9435549	7362694	2637307	4784364	8781222	2
6	6800560	9434861	7365699	2634301	4786918	8779830	2
7	6802877	9434172	7368705	2631295	4789472	8778437	2
8	6805191	9433482	7371709	2628291	4792026	8777043	2
9	6807504	9432792	7374712	2625288	4794579	8775649	2
0	6809816	9432102	7377714	2622286	4797131	8774254	2
1	6812126	9431411	7380715	2619285	4799683	8772858	1
2	6814434	9430720	7383714	2616286	4802235	8771461	1
3	6816741	9430028	7386713	2613287	4804786	8770064	1
4	6819046	9429335	7389710	2610290	4807337	8768666	1
5	6821349	9428643	7392707	2607293	4809888	8767267	1
6	6823651	9427949	7395702	2604298	4812438	8765868	ī
7		9427255	7398696	2601304	4814988	8764468	1
8	6828250	9426561	7401689	2598311	4817537	8763067	1
9	6830548	9425866	7404681	2595319	4820086	8761665	1
0	6832843	9425171	7407672	2592328	4822634	8760262	1
1	6835137	9424476	7410662	2589338	4825182	8758859	-
2		9423779	7413650	2586350	4827730	8757455	
3	6839720	9423083	7416638	2583362	4830277	8756050	
4	6842010	9422386	7419624	2580376	4832824	8754645	
5	6844297	9421688	7422609	2577391	4835370	8753239	_
6		9420990	7425594	2574406	4837916	8751832	-
7	6848868	9420291	7428577	2571403	4840462	8750424	
8	6851151	9419592	7431559	2568441	4843007	8749016	
9	5853432	9418893	7434540	2565460	4845552	8747607	
00	6855713	9418193	7437520	2562480	4848096	8746197	
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	ī

61 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine,	
1	Index 9.	Index 9.	Index 9.	Index 10.			
0	6855712	9418193	7437520	2562480	4848906	8746197	6
I	6857991	9417492	7440499	2559501	4850649	8744786	
2	6860267	9416791	7443476	2556524	4853184	8743375	
3	6862542	9416090	7446453	2553547	4855726	8741963	
4	6864816	9415388	7449428	2550572	4858270	8740550	
5	6867088	9414685	7452403	2547597	4860812	8739136	15
6	6869359	9413982	7455376	2544624	4863354	8737722	
7	6871628	9413279	7458349	2541651	4865895	8736307	
8	6873895	9412575	7461320		4868436		1-
9		9411871	7464290	2 - 3 .	4870976	8733475	
10	6878425	9411166	7467259	2532741	4873517	8732058	5
11	6880688	9410461	7470227	2529773	+876057	8730640	
12	6882919	9409755	7473194	2526806	4878597	8729221	
13	6885209		7476160	2 0 1	4881136	8727801	
14		9408342	7479125	2520875		8726381	
15	6889723	9407634	7482089	2517911	4886212	8724960	4
16	6891978	9406927	7485052	2514948	4888750	8723538	4
17	6894232	9406219	7488013	2511987	4891287	8722116	
18	6896485		7490974	2509026	4893824	8720693	
19		9404801	7493934	2506066	4896361	8719269	
20	6900983	9404091	7496892	2503108	4898897	8717844	4
21	6903231	9403381	7499850	2500150	4901433	8716419	
22	6905476	9402670	7502806		4903968	8714993	
23	6907721	9401959	7505762	2494238	4906503	8713566	1.0
24	6909964		7508716	2491284	4909037	8712139	
25	6912205	9400535	7511669	2488331	4911571	8710713	3
26	6914445		7514622	2485378	4914105	8709281	
27	6916683		7517573	2482427	4916638	8707851	3
28	6918919		7520523	2479477	4919171	8706420	
29	6921155		7523472	2476528		8704989	
30	6923388	9396968	7526420	2473580	4924236	8703557	3

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.		1	
10	6923388	9396968	7526420	2473580	4924236	8703557	30
1	6925620	9396253	7529368	2470632	4926767	8702124	29
2	6927851	9395537	7532314	2467686	4929298	8700590	28
13	6930080		7535259	2464741	4931829	8699256	27
34	6932308		7538203	2461797	4934359	3697821	26
35	6934534	9393388	7541146	2458854	4936889	8696385	25
36	6936758	9392671	7544088	2455912	4939419	8694949	2
37		9391953	7547029	2452971	4941948	8693512	2
38			7549969	2450031	4944477	8692074	2
39		9390515	7552908	2447091	4947005	8690635	2
40	6945642	Company of the last of the las	7555846	2444145	4949533	8589196	20
41	6947859	9389076	7558783	2441217	4952060		1
	6950074		7561718	2438282	4954587	8686315	1
4	6952288		7564653	2435347	4957113		1
4		9386914	7567587	2432413	4959639	8683431	1
1	5 6956712	9386192	7570520	2429480			1
4	6 6958922		7573452	2426548	4964690		1
		9384747	7576383	2423617	4967215		1
	8 6963336			2420687	4969740	1	
	9 6965541			2417758			
-	0 696774	-		2414830			
	1 6969947						
	2 697214			2408978	11		
	63 697434			The second second			
	54 697654			2403129			
- 1	55 697874			_	-11-	4	-1-
	56 698093				498992		
	57 698312						
	58 698532		7608557				
1	59 698751						
1	60 698970					_	
	Co-tine	. Sine.	Co-tan.	Tang.	Nat. Co	. Nat. Si	

M	976	Co fine.	Tang.		Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Indix 9.	Index 10.			-
0	6989700	9375306	7614394	2385606	5000000	8660254	6
1	6991887	1 2 2 1 1 1 1 1	7617311				-
2	6994073		7620227		5005038	8657343	158
3	6996258	1 - 0 1 10	7623142			8655887	57
4	6998441		7626056	1 21 27 11			
5	7000622	120.	7628969	2371031	5012591	8652972	155
6	7002802	1001	7631881	2368119	5015108	8651514	54
7	7004981		7634792	2365208		3650055	153
8	7007158	100 000	7637702	1 - /	5020140	8648595	52
9	7009334		7640612	2359388	5022655	8647134	51
0	7011508	9161988	7643520	2356480	5025170	8645673	50
1	7013681	9367254	7646427	2353573	5027685	8644211	49
2	7015852	9366519	7649334	2350666	5030199	8642748	
3	7018022	9365783	7652239	2347761	5032713	8641284	47
4	7020190	9365047	7655143	2344857	5035227	8639820	
5	7022357	9364311	7653047	2341953	5037740	8638355	45
6	7024523	9363574	7660949	2339051	5040253	8636889	44
7	7026687	9362836	7663851	2336149	5042765	8635423	43
8		9362098	7666751	2333249	5045277	2011	43
- 1	7031011	9361360	7669651	2330349	5047788	8632488	
의	7033170	9360621	7672550	2327450	5050299	8631019	40
	7035329	9359881	7675448	2324552	5052809	8629549	39
	7037486		7678344	2321656		8628079	
- 1	7039641		7681240	2318760	5057828		
	7041795		7684135	2315865		8625136	36
- 1	-	232	7687029	2312971	5062846	8623664	35
	7046399	9356177	7689922	2310078	5065355	8622191	34
	7048248	9355434	7692814	2307186	5067863	8620717	33
		1011		2304295		8619243	32
				2301404			31
2	7054689	9353204	7701485	2298515	5075384	8616292	0
1	Co-tine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

N	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine,	
	Index 9.	Index 9.	Index 9.	Index 10.			
10	7054689	9353204	7701485	2298515	5975384	8616292	30
1	7056833	9352459	7704373	2295627	5077890	8614815	29
2	7058975		7797261	2292739	5080396	8613337	28
3	7061116	9350969	7710147	2289853	5082901	8611859	27
4	7063256		7713033	2286967	5085406	8610380	26
5	7065394	9349477	7715917	2284083	5087910	8608900	2
6	7067531	9348730	7718801	2281199	5090414	8607420	24
37	7069667	9347983	7721684	2278316	5092918	8605939	2
8	7071801	9347235	7724566	2275434	5095421	8604457	2
19	7073933	9346486	7727447	2272553	5097924	8602974	2
40	7076064	9345738	7730327	2269673	5100426	8601491	20
ú	7078194		7733206	2266794	5102928	8600007	1
12	11		7736084	2263916	5105429	8598522	1
13		9343488	7738961	2261039	5107930	8597037	1
†3 44	1 0		7741838		5110431	8595551	1
45	011		7744713	2255287	5112931	8594064	1
46			7747588	2252412	5115431	8592576	1
	100000000000000000000000000000000000000	1	7750462	2249538	5117930	8591088	
47	1 1 1 1 1 1 1 1 1 1 1 1 1		7753334	2246666	5120429	8,89599	1
48		9338976	7756206	2243794	5122927	8588109	I
45	Company of the Compan		7759277	2240923	5125425	8586618	1
-			-				-
5	100000000000000000000000000000000000000	9337467	7764816	2238053	5127922	8585127	
5	2		7767685		5130419	8583635	
5.		2		2232315	5132916		
5			7770552	2229448	5135412	8580649	
5	- Indiana and a second	-	7773418	-	24 77		-
5		m 10 10 10 10 10 10 10 10 10 10 10 10 10	7776284		5140404		1
5			7779149		5142899		1
	8 7114186	The state of the s	7782012				1
	7116290		7784875				-
0	Co-ine.	9330656	7787737 Co-tan.	Tan 2.	5150381 Nat.Co		1

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co fine.	
H	Index 9.	Index 9.	Index 9.	Index 10.		· ************************************	1
C	7118393	9330656	7787737	2212263	5150381	8571673	15
I	7120495	9329897	7790599	2209401	5152874	8570174	15
2		9329137	7793459	2206541	5155367	8558675	5
3			7796318	2203682	5157859	8567175	15
4		9327616		2200823	5160351	8565674	5
5		9326854		2197966	5162842	8564173	5
6	1, 3, 3, 3	9326092		2195109	5165333	3562671	54
7		9325330		2192253	5167824	8561168	5
8	1, 33	9324567		2189398	5170314		5
9		9323804		2186544	5172804		5
10	1 37317			2183691	5175293	8556655	5
11		9322276		2180838	5177782	8555149	49
12		9321511		2177987	5180270		4
13		9320746		2175136	5182758		4
14	7149776	9319980		2172287	5185246		4
				2169438	-	8549118	4
16	7151857	9318447		2166590	5190219		4
17	7153937	9317079	7836258	2163742	5192705		
		9316143		2158051	5195191		4
020	7160168	9315373	7844704	2155206	5200161		40
11		9314605			5202646		39
	7164216	0212825	7850481	2152362	5205130		38
:3	7166387	0313065		2146677	5207613		37
4		9312294		2143836			36
5		9311522		2140996	5212579		35
6		9310750		2138156			34
7		9309978		2135318	5217543		33
8	7176725		The second second second	2132480	5220024	3529440	32
9	7.178789	9308432		2129643			31
0		9307658	Contract to the second	2126807	5224986		30
	Co-ine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan,	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.	1		
30		9307658	7873193	2126807	5224986	85 26402	30
31	7182912	9306883	7876028	2123972	5227466	8524881	20
2		9306109		2121137	5229945	8523360	2
3		9305333	7881696	2118304	5232424	8521838	2
4	7189086	9304556		2115471	5234903	8520316	20
15	7191142	9303781	7887361	2112639	5237381	8518793	2
36	7193195	9303004	7899192	2109808	5239859	8517269	2
17		9302226	7893923	2106977	5242336	8515744	2
8	7197300	9301448	7895852	2104148		8514219	2
39	7199350	9300670	7898681	2101319			2
40	7201399	9299881	7901508	2098492	5249766	8511166	2
41	7203447	9299112	7994335	2095665	5252241	8509639	1
12	7205493	9298332	7907161		5254716	8508111	
43	7207538	9497551	7909987	2000013	5257191	8506582	1
44		9296770			5259665	8505052	I
45	7211623	9295989	7915635	2084365		8503522	1
46	7213664	9295207	7918458	2081542	5264612	8501991	1,
47	7215704	9294424	7921280		5267085	8500459	1
48		9293641	7924101		5269558		1:
49	7219779	9292857	7926921	2073079	5272030		11
50	7221814	9292073	7929741	2070259	5274502	8495860	10
51	7223848	9291229	7932560		5276973	8494325	9
52	7225881	9290504	7935378		5279444	8492790	1
53		9289718	7938195		5281914		1
54	7229943	9288932	7941011		5284384		
55		9288145	7943827	2056173	5286853	8488179	5
56	7234000	9287358	7946641		5289322	8486641	4
57	7236026	9286571			5291790		. 3
58	7238051		7952268		5294258	8483562	1
59	7249975	9284994		2044919	5296726	8482022	11
-	7242097 Co-fine.	9284205	7957892	2042108	5299193	8480481	(

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
14	Index 9.	Index 9.	Index 9.	Index 10.	1000 100	To de la constant	1-
0	7242097	9284205	7957892	2042108	5299193	8480481	6
1		9283415			5301659	8478939	5
2	7246138			2036487	5304125	8477396	5
3	7248156				5306591	8475853	5
4	7250174				5309056	8474309	50
5	7252189		7971938	2028662	5311521	8472764	5
6	7254204			2025255	5313986	8471219	54
7 8	7256217			2022449	5316450		53
	7258229			2019644	5318913	8468126	52
0	7262249	0276285	7985964	2016840	5321376	8466578	51
-	7264257			-	5323839	0 1 0	50
2	7266264	027/605	7991569	2011233	5326301		49
3	7268269	0272800	7994370	2005630		0 . 6 . 1	48
4	7270273	9273103	7997170	2002830	5333684	0 00 -	47
5	7272276	9272306	7999970	2000030		0 0	
-	7274278		8002769	1997231			45
	7276278		8005567	1994433		0	44
	7278277		8008365	1991635		0 6 0	42
	7280275		8011161	1988839	5345982		41
0/2	282271	268314	8013957		5348440		40
	284267 9		8016752	1983248	5350898		39
2 7	286260 9	266714	8019546	1980454			38
3 7	288253 9	265913	8022340	1977660	5355812		37
	290245 9				5358268		36
912	292234 9	264310	8027925	1972075	360724 8	441720 3	15
	294223 9		8030716	1969284	5363179 8	440160 3	14
	2962119	262704	8033506	1966494	5365634 8	438600 3	13
	298197 9	201901	8036296	1963704	368088	437039 3	12
		261096	8039085	1960915	5370542 8	435477 3	1
17	302165 9	260292	8041873	1958127	372996 8	433914 3	0

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	-
-	Index 9.	Index 9.	Index 9.	Index 10.		A leader	-
0	7302165		8041873	1958127	5372996	8433914	3
ı	7304148	9259+87	8044661	1955339	5375449	8432351	2
2		9258681	8047447	1952553	5377902	8430787	2
		9257875	8050233	1949767	5380354	8429222	2
4		9257069	8053019	1946981	5382806	8427657	2
5	7312064	9250261	8055803	1944197	5385257	8426091	2
-1	7314040	9255454	8058587	1941413	5387708	8424524	2
		9254646		1938630	5390158	8422956	2
		9253837		1935848	5392608	8421388	2
	7319961	9253028		1933067	5395058	8419819	2
0	7321932	9252218	8069714	1930286	5397507	8418249	2
1	7323902	9251408	8072494	1927506	5399955	8416679	1
		9250597	8075273	1924727	5402403	8415108	1
	7327837	9249786	8078052	1921948	5404851	8413536	r
	7329803	9248974	8080829	1919171	5407298	8411963	i
5	7331768	9248161	8083606	1916394	5409745	8410390	1
6	7333731	9247349	8086383	1913617	5412191	8408816	1
7		9246535	8089158	1910842	5414637	8407241	I
		9245721	8091933	1908067	5417082	8405666	I
9		9244907	8094707	1905293	5419527	8404090	1
0	7341572	9244092	8047480	1902520	5421971	8402513	1
	The second second	9243277	8100253	1899747	5424415	8400935	
		9242461	8103024	1896975	5426859	8399357	
3	7347440	9241644	8105796	1894204	5429302	8397778	
		9240827	8108266	1891434	5431744	8396198	1
- 1	7351345	9240010	8111336	1888664	5434186	8394618	2
6	7353296	9239191	8114105	1885895	5430028	8393037	ò
7	7355246	9238373	8116873	1883127	5439069	8391455	1.
	7357195	9237554	8119641	1880358	5441510	8389873	9
9	7359142	9236734	8122408	1877592	5443950	8388290	-
	7361088 Co-fine.	9235914	8125174	1874826	446390	8386706	

			33 I	Degrees.			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			-
0	7361088	9235914	8125174	1874826	5446390	8386706	60
1	7363032	9235093	8127939	1872061	5448830	8385121	59
2		9234272	8130704	1869296	5451269		5
3	7366918	9233450	8133469	1866532	5453707	8381950	5
4	7368859	9232628	8136231	1863769		8380363	150
5	7370799	9231805	8138993	1861007	5458582	837,8775	5
6	7372737		8141755	1858245	5461020	8377187	54
7		9230158		1855484	5463456	8375598	5
8		9229334	8147277	1852723	5465892	8374008	5
9		9228509	8150036	1849964		8372418	5
10	7380479	9227684	8152795	1847205	5470763	837,0827	54
11		9216858	8155554	1844446	5473198	8369235	4
12		9226032		1841689	5475632	8367643	4
13			8161068		5478066		4
14			8163824	1836176	5480499	8364456	4
15		9223549	8166580	1833420	5482932	8362861	4
16	7392055	9232721	8169335	1830665	5485365	8361266	4
17	7393980	9221891	8172089	1827911	5487797	8359570	4
18		9221062		1825158		8358073	4
19		9220232		1822405	5492659	8356476	4
20	7399748		8180347	1819653	5495090	8354878	4
21			8183098	1816902	5497520	8353279	3
22		9217738		1814151	5499950	8351680	3
23		9216906		1811401	5502379	8350080	3
24		9216073		1808652	5504808	8348479	3
25		9215240		1805904	5507236	8346877	3
26		9214406		1803156	5509664	8345275	3
27			8199592	1800408	5512091		3
28			8202338		5514518	8342068	3
29		9211902		1794916		8340463	3
30	7418895	-	8207829	1792171	5519370	8338858	3
	Co-tine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat.bi.	IN

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33 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Iniex 9.	Index 10.			
0	7418895	9211066	8207829	1792171	5519370	8338858	30
_		9210229	8210574	1789426	5521795	8337252	29
2		9209393	8213317	1786683	5524220		28
3	7424616	9208555	8216060	1783940			27
4	7426520	9207717	8218803	1781197	5529069		26
35	7428423		8221545	1778455	5531492	8330821	25
36	7430325	9206039	8224280	1775714	5533915	8329212	24
37	7432226	9205200	8227026	1772973	9536338	8327602	23
38	7434126	9204360	8229766	1770234		8325991	22
	7436024	9203519	8232505	1767495		8324380	21
40			8235244	1764756	5543603	8322768	20
41			8237981	1762019	5546024	8321155	19
	7441712		8240719	1759281	5548444		18
43	7443606	9200151	8243455				17
44	7445498	9199308	8246191				16
45			8248926	1751074	5555702	8314696	15
46	7449280	9197619	8251660	1748340			1.
	7451169	9196775	825439				
48	7453056	9195929				1 11	
49	7454943	9195083					
59	7456828	9194237	8262592	1737408	5567790	8306607	1
5	7458712	9193390			5570200		
	7460595						
	3 7462477				11		
		9190845					
5	746623	9189995	8276241	172375	557986	5 8298500	2
5							
5					. 11		
5	1	10					
5							
6			828987	4 171012	6 559192	9 829037	6
1	Co-fine	. Sine.	Co-tan	l'ang.	. Nat.Co	. Nat. Si	

M

31

33 34 35

36

37 38

59 60

B

34 Degrees. Tang. M Co-fine. Sine. Co-tan. Natural Natural Sine. Co-fine. Index 9. Index 9. Index 10. Index 9. 8289874 7475617 9185742 1710126 0 5591929 8290376 60 9184890 8292599 1707401 7477489 8288749 5594340 8287121 7479360 9184037 8295323 1704677 5596751 8298047 1701953 7481230 9183183 5599161 8285493 57 3 7483099 9182329 8300769 1699231 5601571 8283864 56 5603981 7484967 9181475 8303492 1696508 8282234 55 7486833 9180620 8306213 1693787 5606390 8280603 7488699 9179764 8278972 53 8308934 1691066 5608798 5611206 7490562 9178908 8311654 1688346 8277340 52 7492425 9178051 8314374 1685626 5613614 8275707 51 8274074 50 7494287 9177194 8317.93 1682907 5616021 7496148 9176336 8319811 1680189 8272440 49 11 5618428 9175478 8322529 1677471 5620834 12 8270805 48 7498007 7499866 9174619 8325246 1674754 5623239 8269170 47 13 5625644 8267534 7501723 9173760 8327963 1672037 14 46 7503579 9172900 8330079 1669321 5628049 8265897 15 16 5630453 7505434 9172040 8333394 1666606 8264260 44 8262622 43 7507287 9171179 8336.09 1663891 5632857 17 18 7509140 9170317 8338823 1661177 5635260 8260983 42 1658464 5637663 8341536 8259343 41 IQ 7510991 9169455 7512842 9168593 8344249 1655751 5640065 8257703 40 20 9167730 8346961 5642467 8256062 39 21 7514691 1653039 7516538 9166866 8349673 1650327 8254420 38 5644869 5647270 7518385 9166002 8352384 1647616 8252778 23 24 7520231 9165137 8355094 1644906 5649670 8251135 36 8249491 35 7522075 9164272 8357804 1642196 5652070 25 8247847 9163406 8360513 1639487 5654469 26 7523919 134 8246202 33 9162539 8363221 1636779 5656868 7525761 27 7527602 9161673 8365929 1634071 5659267 8244556 32 9160805 8368636 1631364 5661665 8242909 31 29 7529442 5664062 8241262 7531280 8371342 1628657 9159937 Nat. Si. M Nat.Co. M Co-fine. Tang. Sine. Co-tan.

a	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.	1.3	2.	
0		9159937	8371343	1628657	5664062	8241762	30
1	7533118	9159069	8374049	1625951	5666459	8239614	29
		9158200	8376755	1623245	5668850		28
3	6	9157330	8379460	1620540	5671252		27
4	7538624	9156460	8382164	1617836	5673648	8234666	26
15	7540457	9155589	8384867	1615133	5676043	8233015	25
36	7542288	9154718	8387571	1612429	5678437	8231364	24
37	7544119	9153846	8390273	1609727	5680831	8229712	2
8		9152974	8392975	1607025	5683225	8228059	22
		9152101	8395676	1604324	5685618	8226405	2
to		9151228	8398377	1601623	5688011	8224751	20
41	7551431	9150354	8401077	1598923	5690403	8223096	10
	7553256	9149479	8403776	1596224	5692795	8221440	1
43	7555080	9148604	8406475	1593525	5695186		1;
44		9147729	8409174	1590826	5697577	8218127	10
45	7558724	9146852	8411871	1588129	5699968	8216469	1
46	7560544	9145976	8414569	1585431	5702358	8214811	1
47	7562364	9145099	8417265	1582735	5704747	8213152	1
	7564182	9144221	8419961	1580039	5707136	8211492	1
49		9143342	8422657	1577343	5709524	8209831	1
50	7567815	9142464	8425351	1574649	5711912	8208170	1
51	7569630	9141584	8428046	1571954	5714299	8206508	1
52	7571444	9140704	8430739	1569261	5716686	8204846	1
			8433432	1566568	5719073	8203183	
54	7575068		8436125	1563875	5721459	8201519	1
55	7576878	9138061	8438817	1561183	5723844	8199854	_
56	7578687	9137179	8441508	1558492	5726229	8198189	-
57	7580495	9136296	8444199	1555801	5728614	8196523	
58		12 27 1 3	8446889	1553111	5730998		1
59	7584108	9134530		1550421	5733381	8193189	1
00	7585913		8452268	1547732	5735764	8191521	1
	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	1

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35 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.	**	45	-
0	7585913	9133645	8452268	1547732	573:764	8191521	60
1	7587717	9132760	8454956	1545044	5738147	8189852	50
2		9131875	8457644	1542356	5740529	8188182	5
3	7591321	9130989	8460332		5742911	8186512	5
4		9130102	8463018	1536982	5745292	8184841	c
5	7594920	9129215	8465705	1534295	5747672	8183169	5
6	7596718	9128328	8468390		5750052	8181497	54
7 8		9127440	8471075	1528925	5752432	8179824	5
		9126551	8473760		5754811	8178150	5
9		9125662	8476444	1523556	5757190	8176476	5
10	7603899	9124772	8479127	1520873	5759568		50
11		9123882	8481810	1518190	5761946		49
12	7607483		8484492	1515508	5764323		4
13		9122099	8487174		5766700		4
14		9121207	8489855	1510145	5769976	8168094	4
15	7612851		8492536		5771452	8166415	4
16	7614638		8495216		5773827		4
17		9118528	8497896		5776202	8163056	4
1.8		9117634	8500575		5778576	8161376	4
19		9116739	8503253	1496747		8159695	٠.
20	7621775		8505931	1494069	5783323		40
21		9114948	8508608	1491392	5785696		
22	7625337		8511285				38
23		9113155	8513961		10,0		37
24	7628894		8516637	1483363	5792812		36
25	7630671		8519312	1480688	5795183	8149593	35
26	7632447			1478013	5797553	8147906	34
27		9109561		1475339	5799923		33
28	7635996		8527335	1472665	5802292		32
	76.37769				5804661		31
30	7639540 Co-fine.	9106860	8532680	1467320	5807030	8141155	30

1	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
1	Index 9.	Index 9.	Index 9.	index 10.		10	-
	7639540	9106860	8532680	1467320	5807030	8141155	3
-1	7641311	9105959	8535352	1464648	5809398	8139465	2
		9105057	8538023	1461977	5811765	8137775	2
3	7644849	9104155	8540694	1459306	5814132		2
		9103251	8543365	1456635	5816498	8134393	2
5	7648382	9102348	8546034	1453966	5818864	8132701	2
5	7659147	9101444	8548704	1451296	5821230	8131008	2
7		9100539	8551372	1448626	5823595	8129315	2
8	7653674	9099633	8554041	1445959	5825959		2
9	7655436	9098728	8556708	1443292	5828323	8125925	2
0	7657197	9097821	8559376	1440624	5830687	8124229	12
1	7058957	9096915	8562042	1437958	5833050	8122532	ī
2	7660715	9096007	8564708	1435292		8120835	
3	7662473		8567374	1432626	5837774		
4	7664229		8570039	1429961	5840136	8117439	
5	7665985	9093281	8572704	1427296	5842497	8115740	
6	7667739	9092371	8575368	1424632	5844857	8114040	ľ
7	7669492		8578031	1421969	5847217	8112339	ı
8		9090550		1419306	5849577		١
19	7672996	9089639	8583357	1416643	5851936	8108936	ı
50	1		8586019	1413981	5854294	8107233	١
51	1 2	9087814	8588680	1411320	5856652	8105530	ŀ
52	1	9086901	8591341			8103826	ł
53	1.1	9085988			5861367	8102121	۱
54		9085073	8596661	1403339	5863724	8100416	ł
55	7683480	9084159	8599321	1400679	5866080	8098710	1
56		9083243			5868435	8097003	1
57	1 100 0					8095296	1
58							1
55	7690448						
60	769218			1 1 1			
	Co-fine.		Co-tan.	Tang.	Nat.Co	Nat. St.	1

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36 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			1
0	7692187	9079576	8612610	1387390	5877853	8090170	60
1	7693925	9078658	8615267	1384733	5880206	8088460	59
2	7695662	9077740	8617923	1382077	5882558	8086749	58
3		9076820	8620578		5884910	8085037	57
4		9075901	8623233	1376767	5887262	8083325	56
5	7700868	9074980	8625887	1374113	5889613	8081612	55
6	7702601	9074059	8628541	1371459	5891964	8079899	54
7		9073138	8631195	1368805	5894314	8078185	53
8	7706003	9072216	8633848		5896663		52
9	7707793		8636500	1363500		8074754	51
10	7709522	9070370	8639152	1360848	5901361	8073038	50
11		9069446	8641803	1358197	5903709	8071321	49
12		9068522	8644454		5906057	8069603	48
13		9067597	8647105	1352895	5908404		47
14			8649755	1350245		8066166	46
15		9065745	8652404	1347596	5913096	8064446	45
16		9064819	8655053	1344947	5915442	8062726	44
17		9063892	8657702		5917787	8061005	43
18	7723314		8660350		5920132		42
19	7725033	9062036	8662997	1337003	5922476		
20	7726751	9061107	8665644	1334356	5924819		40
21	7728468	9060177	8668291		5927162	8054113	39
22	7730185	9059247	8670937	1329063	5929505	8052389	38
23		9058317	8673583	1326417	5931847	8050664	37
24	7733614		8676228	1323773		8048938	36
25	7735327	9056454	8678873	1321127	5936530	8047211	35
26	7737039	9055522	8681517	1318483	5938871	8045484	34
27	7738749	9054589		1315840	5941211	8043750	33
28		9053656	8686804	1313196	5943550	8042028	32
29		9052722	8689446		5945889	8040299	31
30	7741876	9051787	8692089	1307911	5948228		30
	Co-sine.	Sine	Co-tan.	Tang.	Nat. Co.	Nat. Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	7743876	9051787	8692089	1307911	5948228	8038569	30
31	7745583	9050852	8694731	1305269	5950566	8036838	20
32	7747288		8697372	1302628	5952903	8035107	28
33	7748993	9048980	8700013	1299987	5955240	8033375	2
34	7750697	9048043	8702653	1297347	5957577	8031642	24
35		9047106	8705293	1294707	5959913	8029909	2
36	7754101	9046168	8707933	1292067	5962249	8028175	24
37	7755801	9045230	8710;72	1289428	5964584	8026440	2
8	7757501	9044291	8713210	1286790	5966918	8024705	2:
		9043351	8715848	1284152	5969252	8022969	2
ю	7760897	9042411	8718486	1281514	5971586	8021232	20
11	7762593	9041470	8721123	1278837	5973919	8019494	10
	7764289	9040529	8723760	1276240	5976251	8017756	1
3	7765983	9039587	8726396	1273604	5978583	8016017	1
14	7767676	9038644	8729032	1270968	5980915	8014278	10
15	7769369	9037701	8731668	1268332	5983246	8012538	1
	7771060	9036757	8734302	1265698	5985576	8010797	1.
		9035813	8736937	1263063	5987906	8009056	1
		9034868	8739571	1260429	5990236	8007314	1
9	7776128	9033923	8742204	1257796	5992565	8005571	1
a	7777815	9032977	8744838	1255162	5994893	8003827	10
1	7779501	9032031	8747470	1252530	5997221	8002083	-
2		9031084	8750102	1249898	5999549	8000338	0100
3	7782870	9030136	8752734	1247266	6001876	7998593	1
		9029188	8755364	1244635	6004202	7996847	
5	7786235	9028239	8757996	1242004	6006528	7995100	-
6	7787916	9027289	8760627	1239373	6008853	7993352	
		9026339	8763257	1236743	6011178	7991704	
	7791275	9025389	8765886	1234114	6013503	7989855	1
	7792953	9024438	8768515	1231485	6015827	7988105	
0	7794630	9023486	8771144	1228856	6018150	7986355	(
	Co-fine.	Sine.	Co-tan.	Tang.	Nat Co.	Nat. Si.	N

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A Table of Artificial Sines,

37	Degrees.
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3 4 5 6 7	7794630 7796306 77996306 7799655 7801328 7803000 7804671 7806341 7808010 7809677	9017764 9016808 9015852	Index 9. 8771144 8773772 8776400 8779027 8781654 8784281 8786907 8789533	1226228	6018150 6020473 6022795 6025117 6027439 6029760	7984604 7982852 7981100	55
1 2 3 4 5 6 7	7796306 7797981 7799655 7801328 7803000 7804671 7806341 7808010 7809677	9022534 9021581 9020628 9019674 9018719 9017764 9016808 9015852	8773772 8776400 8779027 8781654 8784281 8786907 8789533	1228856 1226228 1223600 1220973 1218346 1215719	6020473 6022795 6025117 6027439 6029760	7984604 7982852 7981100 7979347	55
3 4 5 6 7	7797981 7799655 7801328 7803000 7804671 7806341 7808010 7809677	9021581 9020628 9019674 9018719 9017764 9016808 9015852	8776400 8779027 8781654 8784281 8786907 8789533	1223600 1220973 1218346 1215719	6022795 6025117 6027439 6029760	7984604 7982852 7981100 7979347	55
3 4 5 6 7	7799655 7801328 7803000 7804671 7806341 7808010 7809677	9020628 9019674 9018719 9017764 9016808 9015852	8776400 8779027 8781654 8784281 8786907 8789533	1220973 1218346 1215719	6022795 6025117 6027439 6029760	7982852 7981100 7979347	58
4 5 6 7	7801328 7803000 7804671 7806341 7808010 7809677	9019674 9018719 9017764 9016808 9015852	8781654 8784281 8786907 8789533	1218346	6025117 6027439 6029760	7981100	57
5 6 7	7803000 7804671 7806341 7808010 7809677	9018719 9017764 9016808 9015852	8784281 8786907 8789533	1215719	6027439	7979347	
6	7804671 7806341 7808010 7809677	9017764 9016808 9015852	8786907 8789533		6029760		
7	7806341 7808010 7809677	9016808	8789533	1213093	7		55
	7808010 7809677	9015852			6032080	7975839	-
21	7809677			1210467	6034400	7974084	53
		0014804	8792158	1207842	6036719	7972328	52
	7×11044	9014895	8794782	1205218	0039038	7970572	51
- 1	7811344	9013938	8797407	1202593	6041356	7968815	50
	7813010	9012980	8800031	1199969	6043674	7967057	49
	7814675	9012021	8802654	1197346	6045991	7965299	48
-	7816339	9011062	8805277	1194723	6048308	7963540	
	7818002	9010102	8807900	1192100	6050624	7961780	
2	7819664	9009142	8810522	1189478	6052940	7960020	45
- 1	7821324	9008181	8813144	1185856	6055255	7958259	44
	7822984	9007219	8815765	1184235			43
		9006257	8818386	1181614		7954735	42
		9005294	8821007	1178993	6062198		41
-1-	7827958	9004331	8823627	1176373	6064511	7951208	40
		9003367	8826246	1173754	6066823	7949443	39
		9002403	8828866	1171134			38
		9001438	8831484	1168516		7945912	37
		9000472	8834103	1165897	6073758	7944146	
		8999506	8836721	1163279	6076069	7942379	35
		8998539	8839338	1100662	6078379		34
		8997572	8841956	1158044	6080689	7938843	33
		8996604	8844572	1155428	6082998		32
11		8995636	8847189	1152811	6085306		31
0 7	Co-fine.	8994667 Sine.	8849805	Tang.	6087614	7933533	30

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37 Degrees.

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			-
30	7844471	8994667	8849805	1150195	6087614	7933533	30
31	7846117	8993697	8852420	1147580	6089922	7931762	29
32	7847762	8992727	8855035	1144965	6092229	7929990	28
33	7849406	8991756	8857650	1142350	6094535	7928218	27
34	7851049	8990784	8860264	1139736	6096841	7926445	26
35	7852691	8989812	8862878	1137122	6099147	7924671	25
36	7854332	8988840	8865492	1134508	6101452	7922896	24
37	7855972	8987867	8868105	1131895	6103756	7921121	23
38	7857611	8986893	8370718	1129282	6106060	7919345	22
39	7859249	8985919	8873330	1126670	6108363	7917569	21
40	7860885	8984944	8875942	1124058	6110666	7915792	20
41	7862522	8983968	8878554	1121446	6112968	7914014	19
	7864157	8982992	8881165	1118835	6115270	7912235	18
43	7865791	8982015	8883775	1116225	6117572	7910456	17
44	7867424	8981038	8886386	1113614	6119873	7908676	16
45	7869056	8980060	8888996	1111004		7906896	15
_	7870687	8979082	8891605	1108395	61 24473	7905115	14
47	7872317	8978103	8894214	1105785	6126772	7903333	13
	7873946	8977123	8896823	1103177	6129071	7901500	12
	7875574	8976143	8899432	1100568	6131369	7899767	11
50		8975162	8902040	1097960	6133666	7897983	10
51	7878828	8974181	8904647	1095353	6135963	7896198	-
52	1, -,	8973199	8907254	1092746	6138260	7894413	9
53		8972216	8909861	1090139	6140556	7892627	
	7883701	8971233	8912468	1087532	6142852	7890841	7 6
55		8970249	8915074	1084926	6145147	7889054	5
	7886944	8969265	8917679	1082321	6147442	7887266	4
57	1	8968280	8920285	1079715	6149736		3
	7890184	8967294	8922890	1077110	6152029	7883688	. 2
	7891802	8966308	8925494	1074506	6154322		1
		8965321	8928098	1071902	6156615	7880107	0
-	Co-line.	Sine.	Co-tan.	Tang.		Nat. Si.	M

52 Degrees.

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M	Sine.	Co fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
1.	Index 9.	Index 9.	Index 9.	Index 10.			Γ
0	7893420	8965321	8928098	1071902	6156615	7880107	6
1	7895036	8964334	8930702	1069298		7878316	15
2		8963346			6161198		
3		8962358		1064091	6163489	7874732	
4	7899880	8961369		1061489	6165779	7872939	5
5	7901493	8960379			6168069	7871145	5
6	7903104		8943715	1050285		7869350	5
7		8958398	8946317		6172648	7867555	5
8		8957406			6174936		5
9	7907933	8956414			6177224		5
10	7909541	8955422	8954119	1045881		7862165	5
11	7911148		8956719	1043281		7860367	4
12	7912754		8959319		6184084	7858569	
13		8952440	8961918		6186370		
14		8951445	8964517 8967116	1035483	6188655		4
15		8950450					1
16	7919168	8949453	8969714	1030286		7851368	4
17	7920769	8948457	3972312	1027688		7849566	1
18	7922309	3947459	8974910	1025090	6197790		
19		8946461	8977507	1019896	6200073	7845961	4
20	7925566	-					-
21	7927163	8944463	8982700	1017300			
22		8943464	8987892	1014704		7840547	3
23	7930355	8941463	8990487	1009513	6211478	7836935	
24	7931949	8940461	8993082	1006918		7835128	3
25	7933543	-	8995677	1004323	6216016	7833320	3
26	7935135	8939458	8998271	1001729	6218314	7831511	
27 28	7936727	8937452	9000865	0999135	6220592		
29	7939997	8936448		0996541	6222869	7827892	
30	7941496		9006052	0993948	6225146	7826082	3
3-	Co-fine.	Sine.	Co-tan.	Tang:	Nat.Co.	Nat. Si.	ī

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			
30		8935444	9006052	0993948	6225146	7826082	30
31	7943083	8934439	9008645	0991355	6227422	7824271	29
32	7944670		9011237		6229698	7822459	28
33	20 64-8	8932426	9013830	0986170	6231973		27
34	7947841	8931419	9016422	0983578			26
35	7949425	8930412	9019013	0980987	6236522	7817019	25
36	7951008	8929404	9021604	0978396	6238796	7815205	24
37	7952590	8928395	9024195	9975805	6241069	7813390	23
38	7954171	8927385	9026786		6243342	7811574	22
39	7955751	8926375	9029376	0970624	6245614	7809757	21
40	7957330	8925365	9031966	0968034	6247885	7807940	20
41	7958909	8924354	9034555	0965445	6250156	7806122	10
12	7960486	8923342	9037144		6252426	7804304	18
43		8922329	9039733		6254696	7802485	17
44	7963638		9042321		6256966	7800665	16
45	7965212	8920303	9044910	0955090	6259235	7798845	15
46	7966786	8919289	9047497	0952503	6261503	7797024	14
47	7968359	8918274	9050085	0949915	6263771	7795202	1
48	7969930		9052672	0947328	6266038	7793380	12
40	7971501		9055259	0914741	6268305	7791557	11
50	7973071	8915226	9057845	0942155	6270571	7789733	10
51	7974640	8914208	9060431	0939569	6272837	7787908	9
52		8913191	9063017	0936983	6275102	7786083	5
53	7977775	8912172	9065603	0934397	6277366		1
54			9068188			7782431	
55	7980906	8910133	9070773	0929227	6281894	7780604	1
56			9073357	0926643	6284157	7778777	7
57	7984034	8908092		0924059	6286430	7776949	
58	1	8907071	9078525	0921475	6288632	7775120	
59				0918891	6290943	7773290	
60	7988718	8905026	9083692	0916308	6293204	7771460	1
	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	IA

A Table of Artificial Sines,

39 Degrees.

M

_			37 -	regrees.		****	_
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
1	Index 9.	Index 9.	Index 9.	Index 10.		1	-
0	7988718	8905026	9083692	0916308	6293204	7771460	60
.1	7990278	8904003	9086275	0913725	6295464	7769629	59
2		8902979		0911142	6297724		58
3	7993394	8901954	9091440	0908560	6299983	7765965	57
4		8900929	9094022	0905978	6302242	7764132	56
5	7996507	8899903	9096603	0903397	6204500	7762298	55
6	7998062	8898877	9099185	0900815	6306758	7760464	54
7		8897850		0898234		7758629	53
8	8001169	8896822	9104347	0895653		7756794	52
9	8002721	8895794	9106927	0893073	6313528	7754958	51
10	8004272			0890493	6315784	7753121	50
11	8005823	8893736	9112087	0887913	6318039	7751283	49
12		8892706		0885334	1	7749445	48
13	8008921	8891675	9117245	0882755	6322547	77+7606	47
14		8890644		0880176	6324800	7745767	4.6
15.	8012015	8889612	9122403	0877597	6327053	7743927	45
16	8013561	8888580	9124981	0875019	6329305	7742086	44
17		8887547				7740244	43
18	8016649	8886513	9130137	0869863	6333808		42
19	8018190	8885479	9132714	0867286	6335059	7736559	41
20	8019735	8834444	9135291	0864709	6338309	7734716	40
21	8021276		9137868	0862132	6340559	7732872	39
22		8882372			6342808		38
23		8881335			6345057		37
24			9145596		6347305		36
25	8027431	8879260	9148171	0851829	6349553	7725489	35
26	8028968	8878221	9150747	0849253	6351800	7723642	34
27		8877182		0846678			33
28	8032038	8876142		0844104			32
29	8033572	8875102	9158471	0841529	6358537	7718096	31
30	8035105	8874061		0838955	6360782	7716246	30
-	Co-tine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat.Si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural . Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	8035105	8874061	9161045	0838955	6360782	7716246	3
31	8036637	8873019	9163618	0836382	6363026	7714395	2
32	8038168	8871977	9166192	0833808	6365270	7712544	2
33	8039699	8870934	9168765	0831235	6367513	7710692	2
34	8041228	886989	9171338	0828662	6369756	7708839	2
35	8042757	8868846	9173911	0826089	6371998	7706986	2
36	8044284	8867801	9176483	0823517	6374240	7705132	2.
37	8045811	8866756	9179055	0820945	6376481	7703278	2
18	8047336	8865710	9181627	0818373	6378721	7701423	2
39	8048861	8864663	9184198	0815802	6380961	7699567	2
40	8050385	8863616	9186769	0813231	6383201	7697710	2
41	8051908	8862568	9189340	0810660	6385440	7695853	I
42	8053430	8861519	9191911	0808089	6387678	7693995	1
43	8054951	8860470	9194481	0805519	6389916	7692137	1
44	8056472	8859420	9197051	0802949	6392153	7690278	1
4;	8057991	8858370	9199621	0800379	6394390	7688418	1
46	80;9510	8857319	9202191	0797809	6396626	7686558	1.
47	8061027	8856267	9204700	0795240	6398862	7684697	1
48	8062544	8855215	9207329	0792671	6401097	7682835	1
49	806406c	8854162	9209898	0790102	1	7680973	1
50	8065575		9212466	0787534	6405566	7679110	14
51	8067089	8852055	9215034	0784966	6407799	7677246	-
52	10 100	8851000	9217602	0782398	6410032	7675382	
53	10	8849945	9220170	0779830	6412264	7673517	
54	10 0 11	8848889	9222737	0777263	6414496	7671651	
55	8073136	8847832	9225304	0774696	6416727	7669785	
56	0		9227871	0772129	6418958	7667918	_
57	8076154	8846775	1	0769563	6421188	7666051	
58		8845717	9230437	0766996	6423418	7664183	
	8079169		9233004	0764430	6425647	7662314	
60	8080675	8842540		0761865	6427876	7660444	
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. Si.	N

M

Sine.

Index 9.

Co-fine.

Index 9.

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40 Degrees. Co-fine. | Tang. Co-tan. Natural Natural Sine. Co-fine. Index 9. Index 10. 0761865 6427876 7660444 60 8080675 8842540 9238135 8082180 8841479 9240701 6430104 7658574 0759299 8083684 8840418 9243266 0756734 6432332 7656703 38 8085188 8839357 9245831 8086690 8838294 9248396 0754169 6434559 7654832 0751604 6436785 7652960 8088192 8837232 9250960 0749040 6439011 7651087 6 8089692 8836168 9253524 0746476 6441236 7649214 7 8091192 8835104 9256088 0743912 6443461 7647340 8 8092691 8834039 925 8652 0741348 6445685 7645465 53 9 8094189 8832974 9261215 0738785 6447909 7643590 51 10 8095686 8831908 9263778 0736222 6450132 7641714 50 8097182 8830841 9266341 0733659 6452355 7639837 12 8098678 8829774 9268904 0731096 6454577 7637968 48 13 8100172 8828706 9271466 0728534 6456798 7636082 47 8101666 8827638 9274028 0725972 6459019 763+204 46 6461240 7632325 45 8103159 8826568 9276590 0723410 16 8104650 8825499 9279152 0720848 6463460 7630445 44 17 8106141 8824428 9281713 0718287 6465679 7628564 43 18 8107631 8823357 9284274 0715726 6467898 7626683 42

6474551 7621036

Tang. Nat. Co. Nat. Si. M

6476767 7619152 38

42 43

44

46

55 8

58 81

59 81

49 Degrees.

19 8109120 8822285 9286835 0713165 6470116 7624801 41 20 8110609 8821213 9289396 0710604 6472334 7622919 40

23 8115069 8817992 9297076 0702924 6478983 7617268 37 24 8116554 8816918 9299636 0700364 6481199 7615383 36

25 8118038 8815842 9302195 0697805 6483414 7613497 35 26 8119521 88 14766 9304755 0695245 6485628 7611611 34 27 8121003 8813689 9307314 0692686 6487842 7609724 33

29 8123965 8811534 9312431 0687569 6492268 7605949 31 8125444 8810455 9314989 0685011 6494480 7604060

Co-tan.

8122484 8812612 9309872 0690128 6490055 7607837 32

21 8112096 8820140 9291956 0708044

22 8113583 8819067 9294516 0705484

Sine.

			40 D	egrees.			
M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	14
-	Index 9.	Index 9.	Index 9.	Index 10		1	-
30	10	100	9314989	0685011	6494480	7604060	30
11	8126923		9317547	0682453	6496692	7602170	29
32	0 0		9320105	0679895	6498903	7600280	28
33		8807215	9322662		6501114		27
34	8131354	8806134	9325220	0674780	6503324	7596498	26
35	8132829	8805052	9327777	0672223	6505533	7594606	25
36		8803970	9330334	9669666	6507742		24
37	10	8802887	9332890	0667110	6509950	7590820	23
38	8137250	8801803	9335446	0664554	6512158	7588926	22
139	8138721	8800719	9338003	0661997	6514366	7587031	2.1
40	8140192	8799634	9340559	0659441	6516572	7585136	20
41			9343114	0656886	6518778		19
42	8143131	8797462	9345670	0654330	6520984		18
43	8144600	8796375	9348225	0651775	6523189	7579446	17
44	8146067	8795287	9350780	0649220	6525394		16
45			9353335		6527598		15
46	8148999	8793110	9355889	0644111	6529801		14
47	8150464	8792021	9358444	0641556	6532004	7571851	13
48	8151928	8790930	9360998	0639002	6534206	7569950	12
149	8153391	8789840	9363552	0636448	6536408	7568049	11
50	8154854	8788748	9366105	0633895	6538609	7566147	10
51	8156315	8787656	9368659	0631341	6540810	7564245	-
52					6543010	7562342	9
53	8159235	8785470	9373765	0626235	6545200	7560439	
154	8160694	8784376	9376318	0623682	6547408		7
55	8162152	8783281	9378871	0621129	6549606	7556630	5
56	8163600	8782186	9381423	0618577	6551804		4
157	8165066	8781000	9383975	0615025	6554001	7552818	2
150	8100521	8779994	9386527	0613473	6556198	7550911	3 2
139	10107975	8778896	9389079	0610921	6558394	7549004	1
00	8109429	8777799	9391631	0608369	6560590	7547096	0
1	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.		M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	Index 10.			-
0	8169429	8777799	9391630	0608369	6560590	7547096	6
1	8170882	8776700	9394182	0605818	6562785	7545187	5
2	8172334	8775601	9396733	0603267		7543278	
3	8173785	8774501	9399284	0600716	6567174	7541368	
4	8175235	8773401	9401835	0598165	6569367	7539457	5
5	8176685	8772300	9404385	0595615	6571560	7537546	5
6	8178133	8771198	9406936	0593064	6573752	7535634	54
7			9409486		6575944		5
8			9412036			7531808	5:
9	8182474	8767889	9414585	0585415	6580326	7529894	51
10	8183919	8766785	9417135	0582865	6582516	7527980	50
11	8185364	8765680	9419584	0580316	6584706	7526065	49
12		8764574		0577767	6586895	7524149	
		8763468		0575218	6589083	7522233	
14	8189692	8762361	9427331	0572669	6591271		
15	8191133	8761253	9429879	0570121	6593458	7518398	45
16	8192573	8760145	9432428	0567572	6595045	7516480	44
17	8194012	8759036	9434976	0565024	6597831	7514561	43
18	8195450	8757927	9437524	0562476		12 1	42
19	8196888	8756816	9140072	0559928	6602202	7510721	41
20	8198325	8755706	9442619	0557381	6604386	7508800	40
21	8199761	8754594	9445106	0554834		7506879	39
	8201196	8753482	9447714	0552286	6608753		38
		8752369		0549739			37
24		8751256		0547193	100	7501111	36
25	8205496	8750142	9455354	0544646	6615300	7499187	35
26			9457900	0542100	6617481	7497262	34
27		8747912		0539553		7495337	33
		8746795		0537007		7493411	32
29	8211217	8745679	9465539	0534461	6624022	7491484	31
30	8212646	8744561	9468084	0531916		7489557	30
-	Co-fine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat.si.	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Iniex 9.	Index 10.			
30	8212646	8744561	9468084	0531916	6626201	7489557	30
11	8214073	8743443	9470630	0529370	6628379	7487629	20
32	8215500	8742325	9473175	0526825	6630557	7485701	2
33	8216926	8741205	9475720	0524280	6632734	7483772	2
34	8218351	8740085	9478265	0521735	6634911	7481842	2
35	8219775	8738955	9480810	0519190	6637087	7479912	2
36	8221198	8737844	9483355	0515645	6639262	7477981	2
37	8222621	8736722	9485899	0514101	6641437	7476049	2
	8224042	8735599	9488443	0511557	6643611	7474117	2
39	8225463	8734476	9490987	0509013	6645785	7472184	2
40	8225883	8733352	9493531	0506469	6647959	7470251	2
41	8228302	8732227	9495075	0503925	6650132	7468317	ī
42		8731102	9498619	0501381	6652304	7466382	1
43	10 0	8729976	9;01162	0498838	6554475	7464446	1
44	10	8728849	9503705	0496295	6656646	7462510	1
45	10	8727722	9506248	0493752	6658817	7460574	1
46		8726594	9508791	0491209	6660987	7458637	I
47		8725460	9511334	0488665	6663156	7456699	1
48		8724337	9513876	0486124	6665325	7454750	i
49	1	8723207	9;16419	0483581	6667493	7452821	i
	8241037	8722076	9518961	0481039	6669661	7450881	1
51		8720945	9521503	0+78497	6671828	7448940	1-
52		8719813	9524045	0475955	6673994	7446999	
53		8718681	9526587	0473413	6670160	7445057	
54	1	8717548	9529128	0470872	6678326	7443115	
55		8716414	9531670	0468330	6680191	7441172	
30				0465780	6682655		-
57	8250896	8715279	9534211	0463248		7439229	
58	8252301	8713008	9539293	0460707	6585981	7435340	1
59		8711872	9541834	0458166	6689144	7433394	1
ó	8255109	8710735	95 4374	0455626	6691305	7+35394	1
-	Co-tine.	Sine.	Co-tan.	Tang.	Nat.Co.	Nat. Si.	1

42	Deg	gree	5.
		-	

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
1	Index 9.	Index 9.	Index 9	Index 10.			
0	8255109	8710735	9544374	0455626	6691306	743 1448	60
1	8256512	8709597	9546915	045308;	6693467	7429501	55
2	8257913	8708458	9549455	0450545	6595628	7427554	58
3	8259314	8707319	9551997	0448005	6597788	7425606	57
4	8260715	8706179	9554535	0445465	6699948	7423657	50
5	8262114	8705039	9557075	0442925	6702107	7421708	55
6	8263512	8703898	9559615	0440385	6704266	7419758	54
7	8264910	8702756	9562154	0437846	6706424	7417808	
7 8	8266307	8701613	9564694	0435307	6708582	7415857	52
9	8267703	8700470	9567233	0432767	6710739	7413905	51
10	8269098	8699326	9569772	0430228	6712795	7411953	50
11	8270493	8698182	9572311	0427689	6715051	7410000	49
12	8271887	8697037	9574850	0425150	6717206	7408046	48
13	8273279	8695891	9577389	0422611	6719361	7406092	47
14	8274671	8694744	9579927	0420073	6721515		46
15	8276063	8693597	9582465	0417535	6723668	7402181	45
16	8277453	8692449	9585004	0414996	6725821	7400225	44
17	8278843	8691301	9587542	0412458	6727973	7398268	43
18	8280231	8690152	9590080	0409920		7396311	42
19	8281619	8689002	9592618	0407382	6732276	7394353	41
20	8283006	8687851	9595155	0404845	6731427	7392394	40
21	8284393	8686700	9597693	0402307	6735577	7390435	39
22	8285778	8685548	9600230	0399770	6738727	7388475	38
23	8287163	8684396	9602767	0397233	6740876	7386515	37
24	8288547	8683242	9605305	0394695		7384554	36
25	8289930	8682088	9607842	0392158	6745 17-2	7382502	35
26	8291312	8680934	9610378	0389622	6747319	7380629	34
27	8292694	8679779	9612915	0387085	6749466	73786.66	33
28	8294075	8678623		0384548		7376702	32
29	8295454	8677460	9517988	0382012	6753757	7374738	31
30	8296833	8676309		0379475	6755902	7372773	30
	Co-fine.	Sine	Co-tan.	Tang.	Nat. Co.	Nat. Si	M

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9.	Index 10.			
30	8296833	8676309	9620525	9379475	6755902	7372773	30
I	8298212	8675151	9623061	0376939	6758046	7370808	20
2	8299589	8673992	9525597	0374403	6,60190	7368842	2
3	8300966	8672833	9628133	0371867	6762333	7366875	2
14	8302342	8671673	9530669	0369331	6761476	7364907	2
35	8303717	8670513	9633201	0366796	6766518	7362939	2
6	8305091	8659351	9635740	0364250	6768760	7360071	2.
17.	8306464	8663189	9638275	0361725	9770901	7359002	2
8	8307837	8567025	9540811	0359189	6773041	7357032	2
19	8309209	8565863	9643346	0356654	6775181	7355061	2
10	8310580	8664699	9645881	0354119	6777320	7353090	2
11	8311950	8663534	9648416	0351534	6779459	7351118	1
12	8313320	8662369	9650951	@349049	6781597	7349146	1
13	8314688	8661203	9553486	0346514	6783734	7347173	1
14	8316056	8660036	9656020	0343980	6785871	7345199	1
45	8317423	8658868	9658555	0341445	6788007	7313225	1
16	8318789	8657700	9661089	0338911	6790143	7341250	1
47	8320155	3656;31	9663623	0336377	6792278	7339275	1
18	8321519		9666157	0333843	6794413	7337299	1
49	8322883	8654192	9668692	0331308		7335322	1
50	8324246	8653021	9671225	0328775	6798631	7.333345	1
;1	8325609	8651849	9573759	0326241	6300814	7331367	1
52	8326970	8650677	9676293	0323707	6802946	7329388	
53	8328331	8649504	9678327	0321173	6805078	7327409	
54	8329691	8648331	9681360	0318640		7325429	
55	8331050	8547156	9683891	0316107	6809339	7323448	_
56	8332408	8645981	9686427	9313573	6811469	7521467	
57	8333766	8644806	9688960	0311040		7319485	
58	8335122	8643629	9691493	0308507	6815728	7347503	
	8336478	8642452	9694026	0305974	6817856	7315520	
00	8337833	8641275	9696559	0303441	6819984	7313537	
B	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	Nat. St.	IN

8

	1	1	1	1	1		_
	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9	Index 9.	Index 9.	Index 10.			-
0	18337833	8641275	9596559	0303441	6819984	7313537	6
i	8339188	8640096	9699091	0300909	6822111	7311553	5
2		8638917	9701624		6824237	7309568	5
3	8341894	8637737	9794157	0295843	6826363	7307583	5
4	8343246	8636557	9706689	0293311	6828488	7305597	5
5	83+4597	8635376	9709221	0290779	6830613	7303610	5
6	8345948	863 -194	9711754	0288246	6832737	7301623	5
7	8347297	8633011	9714286		6834861	7299635	5
8	8348646	8631828	9716818	0283182	6836984	7297646	5
9	8349994	8630644		0280650	6839107	7295657	5
0		8629460	9721882	0278118	6841229	7293667	5
I	8552688	8628274	97 24413	0275587	6843350	7291677	4
2	8354033	8627088	9726945	0273055	6845471	7289686	4
3	8355378	3625902	9729477	0270523	6847591	7287694	4
4	8356722	8624714	9732008	0267992	6849711	7285702	4
5		8623526	9734539	0265461	685183C	7283709	4
16	8359408	8622338	9737071	0262929	6853948	7281716	4
17	8360750	8621148	9739602	0260398	685 066	7279722	4
18	8362091	8619958	9742133	0257867	6858183	7277727	4
19	8354771	8618767	9744664	0255336	6860300	7275732	4
_		8617576	9747195	0252805	6862416	7273736	40
11	8365109	8616.83	9749726	0250274	6864532	7271740	35
22	8367447 8368784	8615190	9752257	0247743		7269743	38
24	8370121	8613997	9754787	0245213	6868761		37
25	8371456	8611608	9757318	0242682	6870875		36
-			9759849	0240151	6872988	7263748	35
0	8372791	8610412	9762379	0237621	6875101	7261748	34
7 8	8375458	8609215	9764909	0235091			33
29	8376790	8606821	9767440	0232560	6879324		32
0	8378122	8605622		0230030	6881435		31
	Co-fine.	Sine.	Co-tan.	Tang.	Nat. Co.	7253744 Nat. Si.	3. M

N	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
	Index 9.	Index 9.	Index 9.	index 10.			-
0	8378122	8605622	9772500	0227500	6883545	7253744	30
1	8379453	8604423	9775030	0224970	6885655	7251741	20
2	8380783	8603223	9777560	0222440	6887764	7249738	2
3	8382112	8502022		0219910	6889873	7247734	2
4	8383441	8600821	9782620	0217380	6891981	7245729	2
5	8384769	8599619	9785149	0214851	6894089	7243724	2
	8386096	8598416	9787679	0212321	6896196	7241718	2
7	8387422	8597213	9790209	0209791		7239712	2
	8388747	8596209	9792738	0207262		7237705	2
9	8390072	8594804	9795268	0204732		7235698	2
0	8391396	8593599	9797797	0202203	6904617	7233690	20
ı	8392719	8592393	9800326	0199674	6906721	7231681	1
	20 1 0	8591186	9802856		6918824	7229671	1
3	0 2	8589978	9805385	0194615	6910927	7227661	1
4		8588770	9807914	0192086	6913029	7225651	i
5	8398004	8587561	9810443	0189557	6915131	7223640	1
6		8586351	9812972	0187028	6917232	7221628	1
7	8400642	8585141	9815501	0184499		7219615	
8	8401959	8583929	9818030	0181970	6921432		1
19		8582718	9820559	0179441		7215588	ı
0			9823087	9176913	6925630		I
51		8580292	9825616	0174384	6927728		-
52	8407222	8579978	9828145	0171855	6929825	7211559	
53	8408527		9830673	0169327		7207528	
14	8400850	3576648	9833202	0160798	6934018	7205511	
55		8575432	9835730	0164270		7203494	
56				-			-
57		8574215	9838259	0161741	6938209	7201476	
58	8415050	8572998	9840787	0159213		7199457	
59	8416404	8571779	9843315	0156685		7197438	
60		8570561	9845844	0154156		7195418	
-	Co-tine.	8569341 Sine.	9848372 Co-tan.	10151628 Tang.	0940584	7193398	A

Index 9. Index 9. Index 9. Index 10. 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 719339 6946584 7184044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 6946584 7194044 71940				Degrees.	44 1			
0 8417713 8569341 9848372 9151628 6946584 719359 718311 7		Natura Co-fine		Co-tan.	Tang.	Co-fine.	Sine.	M
0 8417713 8569341 9848372 9151628 6946584 719359 7	- -			Index 10.	Index 9.	Index 9.	Index 9.	_
1 8419021 8568121 9850900 0149100 6948676 719137 28420328 8566900 9853428 0146572 6950767 718935 69	98 6	719339	6946584			8569341		0
2 8420328 8566900 9853428 0140572 6950767 718935 718733 718328 7	-		6948676	0149100	9850900	8568121	8419021	1
3 8421634 8565678 9855956 0144044 6952858 718733 48422939 8564455 9858484 0141516 6954949 718531 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 718328 6957039 717721 6957039 6957039 718328 6957039 717721 6957039 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6957039 717316 6977375 7167078 6977305 7167078 6977305 716	55 5	2 4 31	1	0146572				2
4 8422939 8564455 9858484 0141516 6954949 718531	33 5	718733		0144044	9855956			3
6 8425548 8562008 9863540 0136,60 6959128 718126 7 8426851 8560784 9866068 0133932 6961217 717923 8 8428154 8559558 9868596 0131404 6963395 717721 10 8430757 8557106 9873651 0126349 6965392 717518 11 8432057 8555878 9876179 0123821 6965392 717316 11 8432057 8555878 9876179 0123821 6969565 7171316 11 8432057 8555878 9876179 0123821 6969565 7171316 11 8432953 8553421 9881234 0118766 6973736 7167078 11 8432953 8552192 9883761 0116239 6975821 7165049 11 8432953 8552192 98886289 0113711 6977905 7163019 11 8432953 8552192 9888810 0111184 6979988 7160989 11 8439842 8548499 9891344 0108656 6982071 7158958 11 8442432 8546033 98983871 0106129 6984153 7156927 12 8443725 8544799 9898926 0101074 6688315 7152863 12 8446310 8541093 9898926 0101074 6688315 7152863 13 8446310 8541093 9906508 0093492 6994555 7146762 14 843891 8539856 9909035 0090965 6996633 7144727 15 8452758 8536142 9916616 0083384 6998711 7142691 7000789 7140655 78452758 8533662 9911562 0088438 6998711 7142691 7000789 7140655 7000903 7133501 9924197 0075803 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543 7009093 7134543	10 5	718531						-
7 8420851 8560784 9866068 0133932 6961217 717923 8 8428154 8559558 9868596 0131404 6963305 717721 9 8429456 8558332 9871123 0128877 6965392 717518 10 8430757 8557106 9873651 0126349 6965392 717316 11 8432057 8555878 9876179 0123821 6969565 7171316 12 8433356 8554650 9878706 0121294 6971651 7169106 13 8434655 8553421 9881234 0118766 6973736 716708 14 8435953 8552192 9883761 0116239 6975821 7165049 15 8437250 8548499 9881344 0108656 6982071 7163019 18 8439842 8548499 9891344 0106129 6984153 7156927 18 844137 8547266 9893871 0106129 6986234 7158958 18 8445018 8542329 9903981 0090519	87 5	718328	6957039		9861012		8424244	5
8 8428154 8559558 9868596 0131404 6963305 717721 98430757 8557106 9873651 0126349 6965392 717518 6967479 717316 6969565 717113 8432057 855878 9876179 0123821 6969565 717113 6971651 7169106 6973736 8553421 9881234 0118766 6973736 7167078 8439842 8548499 9886289 0113711 6977905 7163019 8439842 8548499 9891344 0108656 6982071 7158958 8441137 8547266 98983871 0106129 6986234 7158958 8442432 8546033 9896399 0103601 6986234 7158958 8443725 8544799 9898926 0101074 6688315 7152863 8445018 8543595 9901453 0098547 6990396 7150830 6992476 7148796 8448891 8538619 9900508 0093492 6994555 7146762 8450181 8538619 9900508 0093492 6994555 7146762 6985332 8533662 9911562 0088438 6998711 7142691 7000789 7140655 98455332 8533662 9919143 0080857 7000789 7140655 98455332 8533662 9919143 0080857 7000789 7140655 98455332 8533662 9919143 0080857 70007018 7134543 0080857 70007018 7134543 0080857 70007018 7134543 0080857 7000903 7132505		718126	6959128	0136,60				6
9 8429450 8558332 9871123 0128877 6965392 717518 10 8430757 8557106 9873651 0126349 6967479 717316 11 8432057 8555878 9876179 0123821 6969565 717113 12 8433356 8554650 9878706 0121294 6971651 7169106 13 8434655 8553421 9881234 0118766 6973736 7167078 14 8435953 8552192 9883761 0116239 6975821 7105049 15 8437250 8550961 9886289 0113711 6977905 7163019 16 8438547 8549730 9888810 0111184 6979988 7160989 17 8439842 8548499 9891344 0108656 6982071 7158958 18 8441137 8547266 9893871 0106129 6984153 715027 18 8445018 8545043 9896399 0103601 6986234 7154895 18 8445018 8543564 9901453 0098547 6990396 7150830 18 8445018 8543564 9901453 0098547 6990396 7150830 18 8445018 8543564 9901453 0098547 6990396 7150830 18 8445018 8538619 9909035 0090965 6996633 7144727 18 8452758 8536142 9916616 0083384 6998711 7142691 7000789 7140655 7136581 853832 8533662 9919143 0080857 7009093 7132501 9924197 0075803 7009093 7132501		717923	6961217					7
10 8430757 8557106 9873651 0126349 6967479 717316 11 8432057 8555878 9876179 0123821 6969565 717113 12 8433356 8554650 9878706 0121294 6971651 7169106 13 8434655 8553421 9881234 0118766 6973736 7167078 14 8435953 8552192 9888289 0113711 6977905 7163019 15 8437250 855961 9888810 0111184 6979988 7160989 16 8438547 8549730 9888810 0111184 6979988 7160989 18 8439842 8548499 9891344 0108656 6982071 7158958 18 8447213 8546033 9896399 0103601 6986234 7154895 18 8445018 8543564 9901453 0098547 6990396 7150830 18 8445018 8539856 9909035 00996519 6994555	3 5	717721						8
11 8432057 8555878 9876179 0123821 6969565 717113 12 8433356 8554650 9878706 0121294 6971651 7167078 13 8434655 8553421 9881234 0118766 6975821 7167078 14 8435953 8550961 9886289 0113711 6977905 7163019 15 8438547 8549730 9888810 0111184 6979988 7160989 16 8438547 8548499 9891344 0108656 6982071 7158958 18 8441137 8547266 98983871 0106129 6984153 7156927 18 8442432 8546033 9896399 0103601 6986234 7154895 18 8443725 8544799 9898926 0101074 6688315 7150830 18 8445018 8542329 9903981 0096519 6992476 7148796 18 8448891 8538619 991562 0088438 6998711 7140655 18 8451470 8537381 9914089 0085	7 51	717518						
12 8433356 8554650 9878706 0121294 6971651 7169166 13 8434655 8553421 9881234 0118766 6973736 7167078 14 8435953 8552192 9883761 0116239 6975821 7165049 15 8437250 8550961 9888810 0111184 6979988 7163019 16 8438547 8549730 9888810 0111184 6979988 7163019 18 8439842 8548499 9891344 0108656 6982071 7158958 18 844232 8546033 9896399 0103601 6986234 7154895 18 8443725 8544799 9898926 0101074 6688315 7152863 18 8445018 8542329 9903981 0096519 6992476 7148796 18 8448891 8537381 9914089 0085911 7000789 7140655 18 8451470 8537381 9914089 0085911 7000789 7140655 18 8450618 8533662 9919143 0080	1 50	717316	6967479				8430757	10
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14 8435953 8552192 9883761 0116239 6975821 7165049 15 8437250 8550961 9886289 0113711 6977905 7163019 16 8438547 8549730 9888810 0111184 6979988 7160989 17 8439842 8548499 9891344 0108656 6982071 7158958 18 8441137 8547266 9893871 0106129 6986234 7156927 18 8442432 8546033 9896399 0103601 6986234 7154895 18 8445018 8543564 9901453 0098547 6990396 7150830 18 8447601 8541093 9906508 0093492 6994555 7146702 18 8450181 8538619 9911562 0088438 6998711 7142691 18 8451470 8537381 9914089 0085911 7000789 7140655 18 8450618 8533662 9919143 0080857 7007018 7134581 19 8450618 8532421 9921670 007	6 48			0121294				
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9888810 0111184 6979988 7160989 8439842 8548499 9891344 0108656 6982071 7158958 69841137 8547266 9893871 0106129 6984153 7156927 6986234 7154895 8442432 8546033 9896399 0103601 6688315 7152863 6986234 7154895 6986234 7154895 6986234 7154895 6986234 7154895 6986234 7154895 6986234 7152863 6996396 7150830 6996319 8445018 8542329 9903981 0096019 6992476 7148796 699633 8447601 8541093 9906508 0093492 6994555 7146702 6988438 6998711 7142691 7000789 7140655 718514 8538619 9911562 0088438 6998711 7142691 7000789 7140655 718514 8538618 8538619 9916616 0083384 7002866 7138618 8455332 8533662 9919143 0080857 7009093 7136581 9924197 0075803 7009093 7132505	- 1				001 0			
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18 8441137 8547266 9893871 0106129 6984153 7156927 9896399 0103601 6986234 7154895 66883725 8544799 9898926 0101074 6688315 7152863 6990396 7150830 6992476 7148796 6992476 71497655 7146762 6992476 7136762 6						8549730	3438547	
19 8442432 8546033 9896399 0103601 6986234 7154895 20 8443725 8544799 9898926 0101074 6688315 7152863 21 8445018 8543564 9901453 0098547 6990396 7150830 22 8446310 8542329 9903981 0096019 6992476 7148796 23 8447601 8541093 9906508 0093492 6994555 7146762 24 8448891 8538619 9911562 0088438 6998711 7142691 25 8451470 8537381 9914089 0085911 7000789 7140655 27 8452758 8536142 9916616 0083384 7002866 7138618 29 8455332 8533662 9921670 0078330 7007018 7134543 20 8450618 8532421 9924197 0075803 7009093 7132505								
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81 8445018 8543564 9901453 0098547 6990396 7150830 82 8446310 8542329 9903981 0096019 6992476 7148796 83 8447601 8541093 9906508 0093492 6994555 7146762 84 8448891 8538619 9909035 0090965 6996633 7144727 85 8451470 8537381 9914089 0085911 7000789 7140655 7 8452758 8536142 9916616 0083384 7002866 7138618 8 8454045 8534902 9919143 0080857 7004942 7136581 9 8455332 8533662 9921670 0078330 7007018 7134543 0 8450618 8532421 9924197 0075803 7009093 7132505			6980234					-
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8 8454045 8534902 9919143 0080857 7004942 7136581 9 8455332 8533662 9921670 0078330 7007018 7134543 0 8450618 8532421 9924197 0075803 7009093 7132505	34	140055	7000789 7	0085911				
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0 8450618 8532421 9924197 0075803 7009093 7132505								
Co-tine. Sine. Co-tan. Tang. Nat. Co. Nat. Si.								

M	Sine.	Co-fine.	Tang.	Co-tan.	Natural Sine.	Natural Co-fine.	
-	Index 9.	Index 9.	Index 9	Index 10.	2		-
0	8456618	8532421	9924197	0075803	7009093	7132505	30
-	8457903	8531179	9926724	0073276	7011167	7130466	20
31	8459188	8529936	9929251	0070749	7013241	7128426	28
33	8460471	8528693	9931778	0068222	7015314	7126385	2
34	8461754	8527449	9934305	0065695	7017387	7124344	20
35	8463036	8526204	9936832	0063168	7019459	7122302	2
36	8464318	8524959	9939359	0060641	7021530	7120260	2
37	8465599	.8523713	9941886	0058114	7023601	7118217	2
38	8456879	18522466	9944413	0055587	7025671	7116174	2
	8468158	8521218	9946940	005,3060	7027741	7114130	2
40	8469436	8519970	9949466	0050534	7029810	7112086	20
41	8470714	8518721	9951993	0048007	7031879		1
	8471991	8517471	9954520	0045489	7033947		1
43	8473267	8516220	9957047	0042953		7105948	1
44	8474543	8514969	9959573	0040427	7038081	7103901	1
45	8475817	8513717	9962100	0037900	7040147	7101854	L
-	8477091	8512465					-
	8478365	85.11211	9964627	0035373	7042213	7099,800	1
47	8479637	8509957	9967154		7046342		I
	0 0		9972207	0030320	7048406	7095707	I
	8482180	8507446	9974734	0025266	7050469	7091607	11
-	-		-	-			-
51	8483450	8506190	9977260	0022740	7052532	7089556	
52	8484720	8504933	9979787	0010213	7054594	7087504	0
	8487257	8503675	9982314	0017686	7056655	7085451	
54	8488524	8502417	9984840	0015160	7058716	7083398	
55		-	-				2
56		8499897	9989893	0010107	7062835	7079295	1
57	8491057	8498637	9992420	0007580			0
58		8497375	9994947	0005053		7075180	1
39	8493586	8496113	9997473	0002527	7069011	7073124	1
60	8404850	8494850	Index 10.	Index 10.	7071068	7071068	0
-	Co-fine.			-			2
_	Too-mile.	Sine.	Co-tan	Tang.	Nat. Co.	Mat. Si.	1 1

45 Degrees.

TABLE IV. For finding the Latitude by two Altitudes.

o Hour. Log. Log. Log. Half Log. Half Mid. Log. Log. Middle M S M Rifing. Rifing. Elapsed T'me. Elapfed Time. Ind. 4. Time. Time. 1.37654 20 25202 2.60182 30 1.04901 2.63982 2.66121 0 30 1.97860 26246 2.62274 21 00 1.03857 2.36018 2.94085 1 00 1.02838 0.33078 21 27265 3.11694 30 2.64316 30 2.18409 28260 2.66312 0.58066 22 1.01843 00 2.05916 3.24187 00 1.00870 29233 2.68262 0.77448 22 30 1.96225 3.33878 2 30 0.99918 00 30185 2.70170 3-41796 0.93284 23 1.88307 3 00 0.98988 31115 23 30 2.72036 1.06673 1.81613 3.48490 30 3 0.98077 32026 2.73863 1.18271 00 24 1.75814 3.54289 00 1.28502 24 30 0.97184 32919 2.75652 1.70700 3.59403 30 25 0.96310 CO 1.37653 2.77505 33793 1.66125 3.03978 00 5 1.61986 3.68117 0.95454 34649 2.79124 25 30 1.45931 5 30 0 94614 35489 2.80800 1.53488 26 00 1.58208 3.71895 00 0.93791 2.82461 26 1.60440 30 30313 3.75370 6 1.54733 30 1.66877 0.92982 37121 2.84083 27 00 1.51515 3.78588 00 1.72869 0.92189 2.85675 27 30 37914 1.48520 3.81583 30 7 1.45718 3.84385 28 00 0.91411 386gz 2.87238 1.78474 00 1.83739 0.90646 2.88773 1.43086 3.87017 28 30 39457 8 30 0.89894 40209 2.90282 00 1.88703 29 1.40605 3.89498 00 9 0.89156 2.91765 30 40947 1.93399 29 30 1.382581 3.91845 9 0.88530 41073 00 2.93223 1.97854 30 10 1.36032 3.94071 00 2.94656 30 0.87717 42386 3.96188 2.02091 30 1.33915 30 2,96067 0.87015 43088 2.06131 00 31 1.31806 3.98207 11 00 0 86324 43779 2.97454 2.09991 31 30 4.00136 1.29967 11 30 0.85644 44459 2.98820 00 2.13687 32 4.01983 1.28120 12 oc 3.00164 0.84976 45127 32 30 4.03754 2.17232 1,26349 12 30 3.01488 0.84317 45785 00 2.20638 33 1.24647 4.05456 00 13 3.02792 0.83069 46434 30 2.23915 33 4.07093 1.23010 13 30 0.83030 47073 3.04977 2.27073 34° 2.30120 34 00 1.21432 4.08671 CO 0.82400 47703 3.05342 30 1.19910 4.10193 14 30 3.05590 0.81780 48323 00 1.18440 4.11663 2.33063 35 60 15 3.07819 0.81169 48934 30 35 4.13085 2.35910 1:17018 30 3.09032 0.80567 49536 00 36 4.14461 2.38667 1.15642 16 00 3.10227 0.79973 50130 2.41338 36 30 1.14307 4.15796 16 30 3.11406 0.79387 50716 00 2643930 37-1.13013 4.17090 17 00 3.12570 c.78809 51294 4.18346 2.46447 37 30 1.11757 17 30 3.13718 0.78239 51864 00 2.48893 38 1.10536 4.19567 18 CO 0.77677 52426 3.14850 38 30 1.09348 2.51271 4.20755 18 30 3.15969 0.77122 52981 2.53586 39 1.08193 00 4.21910 19 00 30 0.76574 53529 3.17072 2:55841 39 1.07067 4:23036 1.05970 4.24133 2.58030 40 00 0 76033 54070 3.18162

1	2.4.	-	-	Hour.	-	-		_	-			-3/
1	_	_	•	-	_		11-			1	Hour.	
-	1		Log.			Log.	1	1		Log.	Log.	Log.
1	M	S	Elap			Ri-	N	1	S	Elapi	. Mid.	Ri-
1	1		Tim			fing.	11	-	•	Time		fing.
1-	- -	_	Ind. c		-	Ind 3.	11_	_ _	_	Ind.o.	Ind. 4	. Ind. 3.
		0	7549			19238	0	3	0	58348	7175	
		0	7497	1		20301		10	0	57999		
		0	7445			21351		1 3	0	57653		
14	2 0	0	7393			22389	11	4	0	57310	7279	
	-1-	0	73429	,	- 1	23414	02	3	0	56970	73133	56767
	30	- 4	72926	100		24427	03	0	0	56633	73470	
1			72430			25428	03		_	56298	73805	
14		- 1	71940		-	26418	04			55956	74137	58814
4		- 1	71455			27396	04		_	55637	74466	59486
4		-1	70976	-	-1	28363	05	-	- 1	55311	74792	60152
4	5 30		70503			29320	05			54987	75116	
4	6 3		70034			30266	06		- 1	54666	75437	311
4			69571	60532		31202	06	1-	- 1	5+347	75756	62120
4			68660		1	32128	07	00		54031	76072	62766
41		- 1	-	11.	٠.	33044	07	30	2	53718	76385	63407
48			68212		1	33950	08	ac	- 1	53406	76697	64043
49		1	67769 67330			34847	08	30	- 10	53097	77005	64675
45			66896			35734	09	00		52791	77312	65302
50	00		66466			36613	09	30		52487	77616	65924
50					1-	37482	10	00		5218	77917	66542
51			65620	64062	1 ~	8343	10	30	- 10	51886	78217	67156
51			65204	64899	13	9195	11	00		51589	78514	67765
152		I	64791	65312		10039	11	30	1	51294	78809	68369
52		1	64383	65720		0875	12	00	1-	51002	79101	68969
53			63978		1-		12	30	1	50711	79392	69566
53		1	53578	66125		2523	13	00	1	0423	79680	70158
54	00		53181	66922		3334	13	30	1 -	50137	79966	70745
54	30		52789	67314		4138	14	00		19852	80251	71329
55		16	2400	67703		4935	14	30		19570	80533	71909
		-		68089	-		15	-	1-	19290	80813	72485
55. 56	00		1632	68471	4	6507	15	30	14	19012	81091	73057
56		16	1254	68849	4	7282	10	00	14	8730	81367	
57.			879	69224	4	8811	16	30	14	8462	81641	74189
57	30	6	0508	69595	A	9566	17	20	14	5189	8:914	
57 58	00	6			1	27.50	17	30	-		82184	75307
58	30	5	9775	69963	5	1056	18	00	14	7650	82453	75860
59	00	5	9414	70328	3	1701	18	30	14	7384	82719	76409
59	30	15	90501	71047	0	2530	19	20	14	7119	82984	76955
60	00	15	8700	71403	5	3243	19	30	14	103201	832471	77498
		-		1-3	_	-	201		. 4	0,951	83508	78037

				1	Hou	r.			
М	s	Log. ½ Elapf. Time Ind.o.	Log. Mid. Time Ind.4.	Ri- fing. Ind. 3.	M	s	Log. ½ Elapf. Time Ind.o.	Log. Middle Time.	Log. Rifing.
20	30	46335	83.68	78573	40	30	37203	4.92900	3.97597
21	00	1		79105	41	00	37001	4.93102	
21	30			79634	41	30	36801	4.93302	
22				80159	42	00	36602	4.93501	
22	30		84788		42	30	36403	4.93700	3.99280
23	00		85039	81201	43	00	36206	4-93897	3.99696
23	30	1		81717	43	30	36011	4.94092	4.00100
24		1		82230	44	00	35816		4.00521
24	30		85782	82739	44	30	35622	4.94481	4.00930
25	00		86026	83246	45	00	35429	4.94674	4.01337
25	30	43834	86269	83749	45	30	35238	4.94865	4.01743
26	00		1	84250	46	00	35047	4.95056	
26	30			84748	46	30	34858		
27	00				47	00	34669	4.95434	
27	30			85734	47	30	34482	4.95621	4.03344
28		_	87461	86223	48	00	3429;	4.95808	4.03740
28			10' 2 .	86709	48	30	34110		
29	00			87192	49	00	33925	4.96178	
29	30			87672	49	30	33742	4.96361	4.04916
30	00			88150	50	00	33559	4.96544	4.05304
30	30	41488	88615	88625	50	30	33378	4.96725	4.05690
31	00	1 '	88842	89097	51	00	33197	4.96906	
31	30			89567	51	30	33018	4.97085	
32	00		89291	90034	52	00	32839	4.97264	4.06838
32	30	40590	89513	90498	52	30	32661	4.97442	4.07217
33	00	40368	89734	90960	53	00	32485	4.97618	4.07599
33	30	40149			53	30	32309	4.97794	4.07970
34	00		90173		54	00	32134		4.08344
34	30	39713	90390		54	30	31960	4.98143	4.08716
35	00	39497	90606	92782	55	00	31787	4.98316	4.09087
35	30	39282	90821	93232	55	30	31614	4.98489	4.09456
36	00		91034	93679	56	00	31443	4.98660	
36	30	38856	91247	94123	56	30	31272	4.98831	4.10188
37	00	38646	91457	94566	57		31103	4.99000	4.10552
37	30	38436	1.	95005	57	30	30934	4 99169	4.10914
38	00	38227	-	95443	58	-	30766		4.11275
8	30	38020		95878	58		30599		4.11634
	00	37814			59	00	30433	4.99070	4.11992
9	30	37609			59	30	30268	4.99835	4.12340
	ool	37405	92698	971701	601	00	30103	5.00000	4.12702

2 Hours.											
м	s	Log. ½ Elapt. Time	Log. Mid. Time	Log. Ri- fing.	М	s	Log. ½ Elapí. Time Ind. o.	Log. Mid. Time Ind. 5.	Ri- fing. Ind. 4.		
_	-	Ind. O.	Ind. 5.	Ind.4.	-	-					
06	30	29939	00164	13055	20	30	24006	06097	26031 26330		
01	00	29776	00327	13406	21	30	23738	06365	26628		
10	30	29614 29453	00650	13756	22	00	23605	06498	26924		
02	30	29293	00810	14451	22	30	23472	06631	27220		
-	00	29133	00970	14797	23	00	23340	06763	27514		
03	30	28974	01129	15140	23	30	23200	06894	27807		
04	00	28816	01287	15483	24	00	23078	07025	28099		
04	30	28659	01444	15824	24	30	22948	07155	28391		
05	00	28502	01601	16163	25	00	22819	07284	28681		
05	30	28346	01757	16501	25	30	22690	97413	28969		
06	00	28191	01912	16838	26	00	22561	07542	29257		
06	30	28037	02066	17173	26	30	22433	07670	29544		
07	00	27884	02219	17507	27	00	22305	07797	29830		
07	30	27731	02372	17839	27	30	22180	07923	30115		
08	00	27579	02524	18171	28	00	22054	08049	30398		
08	30	27428	92675	18500	28	30	21928	08175	30681		
09	00	27277	02826	18829	29	00	21803	08300	30963		
09	30	27127	02976	19156	29	30	21679	08424	31244		
10	00	26978	03125	19482	30	00	21555	08548	31523		
10	30	26830	03273	19806	30	30	21432	08671	31801		
111	00	26682	03421	20129	31	00	21309	08794	32079		
11	30	26535	03568	20451	-31	30	21187	08916	32355		
12	00	26389	03714	20771	32	00	21066	09037	32631		
12	30	25244	03859	21091	32	30	20945	09158	32906		
13	00	26099	04004	21409	33	00	20824	09279	33180		
13	30	25955		21725	33	30	20704	09399	33452		
14	30	25811	04292	22041	34	00	20585	09518	33724		
15	00	25668	04435	22355	34	30	20466	09637	33995		
-	-		04577	22658	35	00	20348	09755	34265		
15		25385	04718	24980	35	30	20230	09873	34534		
16		25104	04859	23290	36	00	20113	111	34802		
17	10	24964	04999	23599	37	30	19996	10107	35069 35335		
17		24825	05278	24214	37	30	19764	10339	35600		
18		24687	05410		38	00	19648	10454	-		
18		24550		24520	38	30	19534		36128		
119		1			39	00	19420				
19	30	24277	05826	25430	39	30	19306		36052		
20	100	24141	05962	25731	40		19193		136913		

T 2

1						3 Hours.					
1	М	S	Log. ½ Elapi. Time	Log. Mid. Time	Log. Ri- fing.	м	s	Log. ½ Elapf. Time	Log. Mid. Time	Log. Ri- fing.	
١.		-	Ind. O.	Ind. 5.	Ind. 4.	_	_	Ind.o.	Ind. 5.	Ind. 4.	
1	10	30	19080	11023	37173	00	30	14957	15146	46899	
	41	00	18968	11135	37432	01	00	14863	15240	47127	
	41	30	18857	11246	37690	01	30	14769	15334	47354	
	12	00	18746	11357	37948	02	00	14676	15427	47580	
	12	30	18635	11468	38204	02	30	14583	15520	47806	
	13	00	18525	11578	38460	03	00	14490	15013	48031	
	13	30	18415	11688	38714	O3	30	14398	15705	48255	
	44	00	18306	11797	38968	04	00	14306	15797 15888	4 ⁸ 479 48702	
	44	30	18089	11906	39473	05	30	14215	-	48924	
	45	-	17981				-		15979		
ľ	45	30	17874	12122	39724	05	30	14034	16069	49145	
ľ	46	30		12229	39975	06	30	13944		49366	
	47	00	17660	12443	40474	07	00	13765	16338	49806	
	47	30	17554	12549	40722	07	30	13676	16427	50025	
	48	00	17449	12654	40969	08	00	13587	16516	50243	
ľ	48	30	17344	12759	41215	08	30	13499	-0.	50460	
	49	00	17239	12864	41461	09	00	13411	16692		
	49	30	17135	12968	41706	09	30	13324	16779	50893	
	50	00	17031	13071	41950	10	00	13237	16866	51109	
	50	30	16928	13174	42193	10	30	13150	16953	51324	
	51	00	16826	13277	42435	11	00	13064	17039	51539	
	51	30	16724	13379	42677	11	30	12978		51753	
	52	00	16622	13481	42918	12	00	12893	17210	51966	
1	52	30	16520	13583	43158	12	30	12808	17295	52174	
I	53	00	16419		43398	13	00	12723	17380	52390	
	53	30	16319		43636	13	30	12638	17465	52601	
١	54	00	16219			14	00	1 221	17549	52812	
	54	30	16119	13984		14	30		17633	53022	
ı	55	00	16020		-	15	00		17716	53231	
1	55	30	15921	14182	44583	15	30		17799	53440	
1	56	00	15823	14280	1	16	1			53648	
1	50	30	15725	14378	45052	16			17963	53856 54063	
1	57 57	00	15627	14476	45286	17	00		18045	54269	
	57	30	15530	14573	45518	17					
1	58	00	15434	14069	45750	18			18207	54475 54680	
1	58	30	15338			18	30		18288	54885	
	59	00	15242	14861	46142	19	00	1	18449	55089	
1	59	30				19	30			55293	

3 Hours.											
М	s	Log. ½ Elapf. Time	Log. Mid. Time	Log. Ri- ting.	м	s	Log. 1 Elaps. Time	Log. Mid. Time	Log. Ri- fing.		
		Ind. o.	Ind 5.	Ind. 4.			Ind. o.	Ind. 5.	Ind. 4.		
20	30	11495	18668	55496	40	30	08597	21505	63166		
21	00	11416	18687	55098	41	00	08531	21571	63347		
21	30	11337	18766		41	30	08466	21637	63528		
22	00	11259	13844	56101	42	00	08401	21702	63708		
22	30	1,191	18922	56301	42	30	08336	21767	63888		
23	00	11104	18999	50501	43	00	03271	21832	64067		
23	30	11027	19070	56701	43	30	08207		64246		
24	00	10950	19153	50900	44	00	08143		64425		
24	30	1 3873	19230	57098	44	30	08079		64603		
25	00	10797	193 6	57296	45	00	08015	22088	64780		
25	30	10721	19392	57494	45	30	07952	22151	64957		
26	00	10645	19458	57690	40	00	07889	22214	65134		
26	130	10570	19533	57886	46	30	07827		65310		
27	00	10495	19608	58082	47	00	07765	22338			
27	30	10421	19682	58277	47	30	07703	22400	65661		
28	00	10347	19756	58471	48	00	07641	22462	65806		
28	130	10273	19830	58665	48	30	07579		66010		
29	00	10199	19904	58859	49	00	07518	2 2	66184		
29	30	10126	19977	59052	49	30	07457	22646			
30	60	10053	20050	59244	50	00	07397	22706	66539		
130	30	09981	20122	59436	50	30	07337	22766			
31	00	09909		59627	51	00	07277	22826			
31	30	09837	20266	59818	51	30	07217	22886			
32		09765	20338	60008	52	00	07158	22945	67217		
32	30	09604	20409	60198	52	30	07099	23004	67388		
33	00	09623	20480	60388	53	00	07040	23062	67558		
33	30	09552	20551	60577	53	30	06981	23123	67728		
34	00	1 / 1	20621	60765	54	00	06923	23180	67897		
34	30	09412	20691	60952	54	30	06808	23238	68235		
-	-	_	20761	61139	55	-		_			
35			20830		56	30	06751	23352	68403		
36		09204		61512	50	00	06694	23466	68771		
	10	09135	21026	61698	56	00			68738		
37		08999	21036	62068	57 57	30	06524	23579			
38		08931	-	-	1 2/		06468				
38		08864	21172	62252	58	00	06412	23635	69237		
39		08797	21239	62436	58	30		23746			
39	30	08730	21373	62802	59 59	30					
	loc	08664	21439		60			23856	69897		
-	* . *		- 439	774	1 . 5 .	- 100	- 11	-	-4.21		

4 Hours.											
	1	Log. 1	Log.	Log.			Log. 1	Log.	Log.		
M	S	Elapf.	Mid.	Ri-	M	S	Elaps.	Mid.	Ri-		
		Time	Time	fing.	1		Time	Time	fing.		
_	_	Ind.o.	Ind. 5.	Ind. 4.	_	-	Ind.o.	Ind. 5.	Ind. 4.		
00	30	06192	23911	70001	20	30	04228	25875	76295		
01	00	06138	23965	70224	21	00	04184	25919	76443		
01	30	06084	24019	70387	21	30	04141	25962			
02	00	06030	24073	70550	22	00	04098	26005	76738		
02	30	05977	24126		22	30	04055	26048	76885		
03	CO	05924	24179	70874	2.3	00	04012	26091	77032		
03	30	05871	24232	71036	23	30	03969	26134	77179		
04	00	05818	24285	71197	24	00	03927	26176	77325		
04	30	05766	24337	71352	24	30	03885	26218 26260	77471		
05	00	05714	24389	71518	25	-	3 1.	-	77616		
05	30	05662	24441	71678	25	30	03801	26302	77761		
06	00	05610	24493	71837	26	00	03760	26343	77906		
06	30	05559	24544		26	30	03719	26384	78050		
07	00	05508	24595 24646	72155	27		03678 01638	26466	78194		
07	30	05457		72313	27	30			-		
80	00	05406	24697	72471	28	00	03597	26506 26546	78481		
08	30	05356	24747	72628	28	30	03557	26586	78624 78767		
09	20	05306	24797 24847	72942	29	30	03517	26626	78909		
10	00	05256	24896	73098	30	00		26665	79051		
-	-				30	30	03399	26704	79193		
10	30	05158	24945 24994	73254	31	00	03360	26743	79334		
11	30	05060	25043	73565	31	30	03321	26782	79475		
12	00	05012	25091	73720	32	00	03283	26820	79616		
12	30	04964	25139	73874	32	30		26858	79756		
13	00	04916	25187	74028	33	00	03207	26896	79896		
13	30	04868	25235	74182	33	30	03170	26934	80036		
14	00	04821	25282	74335	34	00	03132	26971	80175		
14	30	04774	25329	74488	34	30	03095	27008	80314		
15	00	04727	25376	74641	35	00	03058	27045	80453		
15	30	04680	25423	74793	35	30	03021	27082	80591		
16	00	04634	25469	74945	36	00	02985	27118	80729		
16	30	04588	25515	75096	36	30	02949	27154	80867		
17	00	04542	25561	75247	37	00	02913	27190	81004		
17	30	04496	25607	75398	37	30	-	27226	81141		
18	00	04451	25652	75549	38	00	02841	27262	81278		
18	30	04406	25697	75699	38	30	02806	27297	81414		
19	00	04361	25742	75848	39		02771	27332	81550 81686		
19	30	04316	25787	75997	39	30	02736	27367	- 4		
20	00	04272	25831	76146	40	00	02701	27402	01021		

40 41 41 42 42 43 43 44	S 30 00 30	Log ½ Elapf. Time Ind. 0. 02667	Log. Mid. Time	Log. Ri-		1	Log. 1	Log.	Log.
41 41 42 42 43 43 44	30	02667	7 1	fing.	M	S	Elapf. Time	Mid. Time	Ri-
41 41 42 42 43 43 44	30		Ind. 5.	Ind. 4.	-	-	Ind. o.	Ind. 5.	Ind. 4.
41 42 42 43 43 44	30		27436	81956	00	30	01480	28623	87116
42 42 43 43 44	_	02633	27470	82091	01	00	01455	28648	
42 43 43 44	00	02599	27504	82226	OI	30	01430	28698	87362 87484
43 43 44		02565	27538	82360	02	00	01405	28722	87606
43	30	02532	27571	82494	02	40	01381		-
44	00	02499	27604	82628	03	00	01357	28746	87728 87850
	30	02466		82761	03	30	01333	28770 28794	87971
		02433	27670	82894	04	00	01309	28817	88092
		02400	27703	83027	04	30	01263	28840	88213
4	00	02368	27735	83159	05	-		28863	
	30	02336	27767	83291	05	30	01240	28886	88334
	00	02304	27799	83423	06	00	01217	28909	88454 88574
	30	02272	27831	83554	06	30	01194	28931	88694
*/	00	02241	27862	83685 83816	07		01172	28953	88814
-	30	02210	27893		07	30	01150		
1.	00	02179	27924	83947	08	00	01128	28975	88933
		02148	27955	84077	08	30	01106	28997	89052
./		02118	27985	84207	09	00	01084	29019	89289
	-	02088	28015	84337 84466	10	30	01042	29061	89407
-1	00	02058	28045		-	-			
,	30	02028	28075	84595	10	30	01021	29082	89525
		01998	28105	84724 84853	11	00	01000	29123	89760
		01969	28134		12	30	00960	29143	89877
		01940	28192	84981	12	30	00940	29163	89994
-	30				-	-	-	29183	-
	00	01882	28221	85236	13	00	00920	29203	90111
	30	01854	28249	85490	13	30	00900	29222	90343
- 1	30	01798	28305	85617	14	30	00862	29241	90459
_	00	01770	28333	85744	15	00	00843	29260	90575
_	-				_	-			90690
55	20	01743	28360	85870	15	30	00805	29279 29298	
	20	01680	28387 28414	85996 86121	16	30		29316	00020
- 1	00	01662	28441	86246	17	00	00769	29334	91035
		01635	28468	86371	17		00751	29352	91149
58	00	01609			18	30		29370	
		01583	28494	86496 86621	18	30	00733	29387	91377
	00		28520 28546	86745		00	00699	29404	
59	30	01531	28572	86869	19	30	00682	29421	91603
601	00		28598		20	-		29438	

144 A Table for finding the Latitude, &c.

1-	5 Hours.											
-		-	,	-	iour.	5.	* 1					
М	s	Log. ½ Elapf. Time Ind. o.	Log. Mid. Time Ind. 5.	Ri- fing. Ind. 4.	M	s	Log. Elapf. Time Ind.	Log. Mid. Time Ind. 5.	Log. Rifing.			
20	30	00648	29455	91829	40	30	00158	29945	4.96:43			
21	00	00632	29471	91942	41	00	00150	29953	4.952:6			
21	30	00616	29487	92054	41	30	00142	29951	4.95349			
22	00	00600	29503	92166	42	00	00134	29969	4 95452			
22	30	00584	29519	92278	42	30	00127	29976	4.96554			
23	00	00568	29535	92390	43	00	00120	29983	4.96656			
23	30	00553	29550	92501	43	30	00113	29990	4.96758			
24	00	00538	29565	92612	44	00	00100	29997	4.96850			
24	30	00523	29580	92723	44	30	00099	30004				
25	00	00508	29595	92834	45	co	00093	30010				
25	30	00494	29009	92944	45	30	00087	30016				
26	00	00480	29623	93054	46	00	00081	30022	4.97264			
26	30	00466	29637	93164	46	30	00075	30028				
27	00	00452	29651	93274	47	00	00070	30033	1 000 0			
27	30	00438	29665	93383	47	30	00065	30038				
28	00	00425	29678	93492	48	00	00060	30043	4.97665			
28	30	00412	29691	93601	48	30	00055	30048				
29	00	00399	29704	93709	49	00	00050	30053	4.9786			
29	30	00386	29717	93817	49	30	00045	30058	4.97964			
30	00	00373	29730	93925	50	00	00041	30062				
30	30	00361	29742	94033	50	30	00037	30066	4.98162			
31	00	00349	29754	94141	51	00	00033	30070	4.98261			
31	30	00337	29766	94248	51	30	00029	30074	4.98359			
32	00	00325	29778	94356	52	00	00026	30077	4.98457			
32	30	00313	29790	94463	52	30	00023	30080	4.9855			
33	00	00302	29803	94570	53	00	00020	30083	4.9865			
33	30	00291	29812	94676	53	30	00017	30086	4.9875			
34	00	00280	29823	94782	54	00	00015	30088	4.9884			
134	30	00269	29834	94888	54	30	00012	30090	4.9894			
35	00	00259	29844	94994	55	00	00010	30092	4.9904			
35	30	00249	29854	95100	55	30	00008	30094	4.9913			
136	00	00239	29864	95205	56	00	00007	30096	4 9923			
36	30	00229	29874		56	30	00005	30098	4.9933			
37	00	00219	29884	95415	57	00	00004	30099	4.9942			
137	30	00209	29894	95520	57	30	00003	30100	4.9952			
38	00	00200	29903	95624	58	00	00002	30101	4.9962			
38	30	00191	29912	95728	58	30	10000	30102	4.9971			
39	00	00182	29921	95832	59	00	00000	30103	4.9981			
39	30	00174	29929	95936	59	30	00000	30103	4.9990			
40	col	00166	29937	96040	100	00	00000	30103	1.0000			

TABLE V. Of Log. Versed Sines with Natural Tangents and Secants.

og.

				9	ina seci				
_	M	Log.	LogCo	Nat.	Nat.	Nat.	Nat.	1	1
D	M	Ver.Si.	Ver.Si.	Tang.	Co. Ta	Secant	Co.Se.		
0	0	0.0000	10.000	00000	Infinite	1.0000	3437.7	0	90
	1	2.6264	9.9999	00029	3437.7	1.0000	343.77	50	1
	10	4.6264	9.9987	00291	343-77	1.0000	171.89	40	1
7	20		9.9975	00582	171.88	1.0000	114.59	30	
	30	5.5807	9.9962		114.59	1.0000	85.946	20	
	40	5.8305	9.9949	01164	85.940	1.0001	68.757	10	
	50	6.0243	9.9936	01454	68.750	1.0001			_
ī	0	6.1827	9.9923	01745	57.290	1.0002	57.299	0	89
	10	6.3166	9.9911	02036	49.104	1.0002	49.114	50	1
	20	6.4326	9.9898	02327	42.964	1.0003	42.976	40	
	30	6.5349	9.9885	02618	38.188	1.0003	38.202	30	
		6.6264	9.9872		34.368	1.0004	34.382	20	
	50	6.7092	9.9859	03201	31-242	1.0005	31.257	10	
2	0	6.7847	9.9846	03492	28.636	1.0006	28.654	0	88
	10	6.8542	9.9833	03783	26.432	1.0007	26.450	50	
	20	6.9186	9.9819	04074	24.542	1.0008	24.562	40	
	30	6.9785	9.9806	04366	22.904	1.0009	22.925	30	
	40	7.0346	9.9793	04657	21.470	1.0011	21.494	20	
	50	7.0872	9.9780	04949	20.206	1.0012	20.230	10	
3	0	7-1369	9.9766	05241	19.081	1.0014	19.107	0	87
-	10	7.1838		05532	18.075	1.0015	18.103	50	1
	20	7.2283	9.9740		17.169	1.0017	17.198	40	200
	30	7.2707	9.9726	06116	16.350	1.0019	16.380	30	
	40	7.3111	9.9713	06408	15.605	1.0020	15.637	20	
	50	7.3497	9.9699	067.00	14.924	1.0022	14.958	10	
4	O	7.3867	9.9686	06992	14.301	1.0024	14.335	0	86
	to	7:4221			13.727	1.0026		50	
	20	7.4562	9.9659	07577	13.197	1.0029		40	
	30	7.4889	9.9645	07870	12.706	1.0031	12.745	30	
	40	7.5205	9.9631	08162	12.251	1.0033	12.291	20	
_	50	7.5510	9.9618	08455	11.826	1.0036	11.868	10	
5	0	7-5804	9.9604	c8748	11.430	1.0038	11.473	0	85
	10		9.9590	09042	11.059	1.0041		50	3
	20	7.6364	9.9576	09335	10.712	1.0043	10.758	40	-
	30	7.6631	9.9562	09628	10.385	1.0046	10.433	30	
۲	40	7.6890	9.9548	09923	10.078	1.0049	10.127	20	-
_	50	7.7142	9.9534	10216	9.788	1.0052	9.839	10	81
		LogCo	Log.	Co.	Tang.	Co.	Secant	-	-
		Ver.Si.	Ver.Si.	Tang.	0	Secant			

D	M	Log. Ver. Si	LogCo Ver.Si.	Nat. Tang.	Nat. Co. Ta	Nat. Secant	Nat. Co.Se.	M	D
6	-		9.9520	-	9.5144	1.0055	9.5668	-0	84
٦			9.9506	10804	9.2553	1.0058	9.3091	50	04
	20	7.7855	9.9492			1.0061	9.0651	40	100
	30		9 9478		8.7769	1.0065	8.8337	30	
			9.9464	11688	8.5555	1.0068	8.6138	20	
	50	•	9.9450	0.1	8 3449	1.0071	8.4047	10	
-	0		9.943;	12278		1.0075	8.2055	0	83
7	10		9.9421			1.0079	8.0156	50	03
	20		9.9407			1.0082		40	
	30		9.9392			1.0086	7.6613	30	
- 6			9.9378		7.4287	1.0090	7-4957	20	
	50	7.9699	9.9364	13757	7.2687	1:0094	7-3372	10	
8	0	-	9.9349		7.1154	1.0008	7.1853	-	82
	10	8.0061			1		7.0396	50	
	20		9.9320		1000			40	
	30		9.9305		1		6.7655	30	
			9.9291		1		1	20	
	50	8.0741			1	1.0120	6.5121	10	
9	0	8.0903					-	10	81
,	10	10 "			6.1970				
	20	8.1218	and the second second					40	
	30	8.137		1 1				30	
	40		9.9202			1.0144			
	50	10 7	19:9187	17333	5.7693	1.0149	5.8554	10	
10	0		9.9172	17032	5.6713	1.0154	5.7588	0	80
	10		9.9156		5.5764			50	1
	20		9.9141	-		The same of the			
	30		9.9126	18534	15.3955			130	
12	40		9.9111		5.3093			20	1
	50		9.9096		5.2257	1.0181	5.3025	10	1
11	10		9.9080	19438	5.1445	1.0187	5.2408	0	79
	10		9.906		10 :00		100		
	20		9.9050		4.9894				
18	30		9.9034				1 .		
	40	8.315	9.9019				4.9452	20	14
	50		9.9003				0 /		78
-	-	LogCo		Co.	Tang.	Co.	Secant	1	
	1.	Ver.Si	. Ver. Si	. Tang		Secant	Sec.	1	1

	-	Local	LogCo	Nat.	Nat.	Nat.	Nat.		
D	M	Ver. Si	Ver Si.		Co. Ta	Secant	Co.Se.	M	D
-	-		9.8988		4.7046	1.0223	4.8097	0	78
12	0	8.3395	9.8972		4.5382	1.0239	4 7448	50	/"
	10		9.8956	21559		1.0236	4.6817	40	
		8.3632	1 1		4.5107	1.0243	4.6202	30	
	30	8.3748	9.8925	22474		1.0249	4.5604	20	
		- 1	9.8909		4.3896	1.0256	4.5022	10	
-	50		9.8893		-	1.0263	4.4454		-
13	0		9.8877		4-3315	1.0270	4.3901	50	77
1		8.4198	1		4-2747	1.0277	4.3362	40	
1 8	20	8.4306	9.8845	24007	4.1653	1.0284	4.2837	30	
1 -		8.4520		24315	4.1126	1.0291	4.2324	20	
	50	1 -1	9.8813	24624	4.0611	1.0299	4.1824	10	-
-	-	_			4.0108		4.1336	0	76
14		1 .		24932	3.9616	1.0305	4.0859	50	70
	10	1		25242	3.9136	1.0321	4.0394	40	
1	30	1 120		25551 25861	3.8667	1.0329	3.9939	30	
1			9.8748	26172	3.8208	1.0337	3.9495	20	
1	40	8.5228	9.8732	26483	3.7759	1.0345	3.9061	10	
-	-						3.8637	-	-
119		1 33-1	9.8699	26794	3.7320	1.0353	3.8222	0	75
1.	10	13.5	1 -111	27106	3.6470	1.0359	3 7817	50 40	-
	20	117		27419	3.6059		3.7429	30	-:-
	30			27732	3.5656		3.7031	20	
1	50		1	28359	3.5261	1.0394	3.6651	10	
-			-				3.6280	0	1=
1		8.5881		28674					74
	10	1- 17/		28989	3.4495	1.0412	3.5915	50	
	20	1		29305	3.4124		3.5559	30	
1	3				3.3759		1 01	20	
1	5		9.8532	30255	3.3052			10	1
1	_	_						-	-
1	'	0 8.640					3.4203		73
		0 8.648		30891				50	
	-	0 8.657							
			4 9.8446						
		0 8.673	6 9.8429						
1	- 3			1	-		-	1-	1
	1	LogC		Co.	Tang.	Co. Secant	Secant	1	
1	_	Ver.S	i.l Ver. Si	Tang.	1	Secant		1	1

D	M	Log.	LogCo	Nat.	Nat.	Nat.	Nat.	M	D
v		Ver.Si	Ver.Si	Tang.	Co. Ta	Secant	Co.Se.	147	U
18	0	8.6897	9.8395	32491	3.0777	1.0514	3.2361	0	72
	io	8.6976		32813	3.0475	1.0525	3.2074	50	1'-
	20	8.7055			3.0178	1.0535	3.1792	40	
	30	8.7133	9.8342	33459	2.9887	1.0545	3.1515	30	
	40	8.7210	9.8325	33783	2.9600	1.0555	3-1244	20	
	50	8.7287	9.8307	34107	2.9319	1.0566	3.0977	10	
19	0	8.7362	9.8289	34432	2.9042	1.0576	3.0715	0	71
	10	8.7438	9.8272	34758	2.8770	1.0587	3.0458	150	
	20	8.7512			2.8502	1.0598		40	
	30	8.7586	9.8236		2.8239	1.0608	2.9957	30	
	40	8.7659	9.8218		2.7980	1.0619	2.9713	20	
	50	8.7732	9.8200	36067	2.7725	1.0631	2.9474	10	
20	0	8.7804	9.8182	36397	2.7475	1.0642	2.9238	0	70
	10	8.7875	9.8164		2.7228	1.065;	2.9006	50	
	20	8.7946	9.8146	37057	2.6985	1.0664	2.8778	40	
	30	8.8016	9 8128		2.6746	1.0676	2.8554	30	
	40	8.8085	9.8109	37720	2.6511	1.0688	2.8334	20	1
	50	8.8154	9.8091	38053	2.6279	r.0699	2.8117	10	_
21	0	8.8223	9.8073	38386	2.6051	1.0711	2.7904	0	69
1	10	8.8291	9.8054	38720		1.0723	2.7694	50	-1
	20	8.8358			2.5605	1.0735	2.7488	40	
	30	8.8425	9.8017	39391	2.5386	1.0748	2.7285	30	
	40	8.8491		39727	2.5171	1.0760	2.7085	20	1
	50	8.8557	9.7980	40064	2.4960	1.0773	2.6888	10	_
22	0	8.8622	9.7961	40402	2.4751	1.0785	2.6695		68
-	10	8.8687	9.7943	40741	2.4545		2.6504	50	
	20	8.8751	9.7924	41080	2.4342	1.0811	2.6316	40	
	30	8.8815	9.7905	41421	2.4142	1.0824	2.6131	30	
	40	8.8878	9.7886	41762		1.0837	2.5949	20	
	50	8.8941	9.7867	42104	2.3750	1.0850	2.5769	10	_
23	0	8.9003	9.7848	42447	2.3558	1.0864	2.5593	0	67
	10	8.9065		42791	2.3369	1.0877	2.5419	50	11
- 1	20			43135	2.3183	1.0891	2.5247	40	1
	30		9.7790		2.2998	1.0904	2.5078	30	
	4°		9.7771	43827	2.2817	1.0918	2.4912	20	66
-	50	8.9308	9.7752	44174	2.2637	1.0932	2.4748	10	66
		LogCo	Log.	Co.	Tang.	Co.	Secant	- 1	
. 1	1	Ver.Si 1	Ver.Si	Tang.	The Park	Secant	10.127		.1

-		Log.	LogCo	Nat.	Nat.	Nat.	Nat.	IM	In
D	M	Ver.Si	Ver.Si	Tang.	Co. Ta	Secant	Co.Se.	M	שן
24	0	8.9368	9.7732	44522	2.2460	1,0946	2.4586	0	66
-4	10	8.9427	9.7713	44871	2.2286	1.0961	2.4426	50	
	20	8.9486	9.7693	45221	2.2112	1.0975	2.4260	40	
	30	8.9544	9.7674	45572	2.1942	1.0989	2.4114	30	
	40	8.9602	9.7654	45924	2.1775	1.1004	2.3961	20	
	50	8.9659	9.7634	46277	2.1609	1.1019	2.3811	10	_
25	0	8.9717	9.7615	46630	2.1445	1.1034	2.3662	0	65
-	10	8.9774	9-7595	46985	2.1283	1.1049	2.3515	50	1
	20	8.9830	9.7575	47340	2.1123	1.1064	2.3371	40	,
	30	8.9886	9.7555	47697	2.0965	1.1079	2.3228	30	140
	40	8.9942	9.7535	48055	2.0809	1.1095	2.3087	20	740
	50	8.9997	9.7515	48413	2.0655	1.1110	2.2949	10	_
26	0	9.0052	9.7494	48773	2.0503	1.1126	2.2812	0	64
	10	9.0107	9.7474	49133	2.0352	1,1142	2.2676	50	
	20	9.0161	9.7454	49495	2.0204	1.1158	2.2543	40	
	30	9.0215	9.7433	49858	2.0057	1.1174	2.2412	30	
	40	9.0268	9.7413	50221	1.9912	1.1190	2.2282	20	
	50	9.0321	9.7392	50586	1.9768	1.1207	2.2153	10	
27	0	9.0374	9.7372	50952	1.9626	1.1223	2.2027	0	63
1	10	9.0426	9.7351	51319	1.9486	1.1240	2.1902	50	
	20	9.0478	9.7330	51687	1 9347	1,1257	2 1779	40	
-	30	9.0530	9.7310	52056	1.9210	1.1274	2.1657	30	
	40	9.0582	9.7289	52426	1.9074	1,1291	2.1537	20	3
	50	9.0633	9.7268	52798	1.8940	1.1308	2.1418	10	
28	0	9.0684	9.7247	53170	1.8807	1.1326	2.1300	0	62
	10	9.0734	9.7226	53544	1.8676	1.1343	2.1185	50	
	20	9.0784		53919	1.8546	1.1361	2.1070	40	
	30	9.0834	9.7184	54295	1.8418	1.1379	2.0957	30	13
	40	9.0884	9.7162	54672	1.8291	1.1397	2.0846	20	1
	50	9 0933	9.7141	55051	1.8165	1.1415	2.0736	10	
29	0	9.0982	9.7120	55430	1.8040	1.1433	2.0627	0	61
-	Io	9.1031	9.7098	55841	1.7917	1.1452	2.0519	50	
	20	9.1079	9.7077	56193	1.7795	1.1471	2.0413	40	
-	30	9.1127	9.7055	56577	1.7675	1.1490	2.0308	30	
	40	9.1175	9.7033	56961	1.7555	1.1508	2.0204	20	
	50	9.122	9.7011	57347	1.7437	1.1528	2.0101	10	60
		LogCo	Log.	Co	Tang.	Co.	Secant		
		_ 0	Ver.Si	Tang.	0	Secant			

_				-	-				
D	M	Log. Ver.Si	LogCo Ver.Si	Nat. Tang.	Nat. Co. Ta	Nat. Secant	Nat. Co. Se	M	D
30	-0					1.1547		-	-
30	10		9.6990	57735	1.7320	1.1566	1.9900	0	60
		9.1364				1.1586	1.9801	50	
	30		9.6924	58904	1.6977	1.1606		40	
1	40		9.6901	59296		1.1626	1.9606	20	
	50	9.1502	9.6879	59690		1.1646	1.9511	10	
31	0			60086	1.6643	1.1666		0	-
3.	10	9.1548	9.6835	60482	1.6534	1.1687	1.9323		59
		9.1639		60880	1.6+25		1.9230	50	
			9.6789	61280		1.1728	1.9139	30	
260			9.6768	61680		1.1749	1.9048	20	
	50	9.1773	9.6744	62083		1.1770	1.8959	10	
32	0	9.1817	9.6722	62486		1.1792	1.8870	-	58
34			9.6699	62892		1.1813	1.8783	50	20
			9.6676			1.1835	1.8697	40	
		9.1948	9.6653	63707		1.1857	1.8612	30	
	-	9.1991	9.6630			1.1879	1.8527	20	
	50	9.2034	9.6607		1.5497	1.1901	1.8443	10	
33	0	9.2077	9.6583			1:1924	1.8361	10	57
33		9.2120				1.1946		50	2/
			9.6537	65771		1.1969	1.8198	40	
		9.2204	9.6513			1.1992		30	
		9.2246			1.5013	1.2015	1.8039	20	
	50		9.6466		1.4919	1.2039	1.7960	10	
34	_		9.6442	-	1.4826	1.2062	1.7883	0	56
1		9.2370			1.4733	1.2086	1.7806	50	
		9.2411	9.6395			1.2110	1.7730	40	
		9.2452	9.6371		1.4550	1.2134	1.7655	30	
3.5		9.2492	The second second second		1.4460		1.7581	20	
N.	50	9.2533	9.6323		1.4370	1.2183	1.7507	10	-
35	0	9.2573	9.6298	70020	1.4281	1.2208	1.743+	0	55
1	10		9.6274		1.4193	1.2233	1.7362	50	
	20		9 6250	70891	1.4106	1.2258	1.7291	40	
1	30		9.6225	71329	1.4019	1.2283	1.7220	30	A
	4.0	9.2732	9.6201	71769	1.3933	1.2309	1.7151	20	9
	50	9.2771	9.6176	72210	1.3848	1.2335	1.7081	10	54
		LogCo	Log.	Co.	l'ang.	Co.	Secant	13	
1	1	Ver.Si	Ver.Si	Tang.		Secant		1	
				-				-	

1.		Log.	LogCo	Nat.	Nat.	Nat.	Nat.	M	D
D	M	Ver.Si	Ver.Si	Tang.	Co. Ta	Secant	Co.Se.		ט
56	0	9.2810	9.6151	72654	1.3764	1.2361	1.7013	0	54
1	10	9.2849	9.6126	73999	1.3680	1.2387	1.6945	50	
	20	9.2887	9.6101	73546	1.3597	1.2413	1.6878	40	1
	30	9.2926	9.6076	73996	1.3514	1.2440	1.6812	30	14
		9.2964	9.6051	74447	1.3432	1.2467	1.6746	20	
-	50	9.3002	9.6026	74900	1.3351	1.2494	1.6681	10	
37	0	9.3040	9.6000	75355	1.3270	1.2521	1.6616	0	53
"	10	9.3077	9.5975	75812	1.3190	1.2549	1.6553	50	,,
1	20	9.3115	9.5950	76271	1.3111	1.2577	1.6489	40	
	30	9.3152	9.5923	76732	1.3032	1.2005	1.6427	30	
	40	9.3189	9.5899	77195	1.2954	1.2633	1.6365	20	
	50	9.3226	19.5873	77601	1.2876	1.2661	1.6303	10	
38	a	9.3203	9.5847	78128	122799	1.2690	1.6243	0	52
3	10	9.3300	9 5821	78598	1	1.2710	1.6182	50	3-
	20	9.3336	9-5795	79060	1.2647	1.2748	1.6123	40	
	30	9.3374		79543	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1.6064	30	i
	40	9.3408	9-5743	80019		1.2807	1.6005	20	
	50	9.3444	9-5716	80497	1.2423	1.2837	135047	10	
39	0	9.3480	9.5689	80978	1.2349	1.2868	1.5895	0	51
122	10	9.3516	9.5663	81461			1.5833	50)-
	20	9-3551			1.2203			40	
	30	9.3586			1,2131		1.5721	30	
1	40	9.3621	9.5583	82923	1.2059		1.5666	20	
	50	9.3656		10	1.1988	1.3022	1.5511	10	
40		9.3691		_		1.3054	1.5557	0	150
120	10					1.3086	1.5504	50	1,0
1	20	9.3760		84906		1.3118	1.5450	40	
1	30	The state of the second		85408		1	1.5398	30	
1	40	1 1		10			1.5345	20	
1	50			86419		1.3217	1.5294	10	
41			-	86928		-	1.5342	0	1-
1	110	1	10000	87410			1.5192	50	49
1	20			1			1.5141	40	
	30		1	88472			1.5092	30	1
1	40			88992		1.3386	1.5042	20	
1	50		10000	89515	1.1171	1.3421	1.4993	10	48
-	1-	LogCo	1-	Co.	Tang.	Co.	Secant	-	1
	1	Ver.Si	Ver.Si	Tang.	Lang.	Secant.	Secant		1

D	IM	Log.	LogCo	Nat.	Nat.	Nat.	Nat.	100	1
ע	IVI	Ver.Si	Ver.Si	Tang.	Co. Ta	Secant	Co. Se.	M	D
42	0	9.4007	9.5196	90040	1.1106	1.3460	1.4045	10	48
	10	9.4130	9.5168	90568	1.1041	1.3492	1.4897	50	140
	20	9.4162	9.5139	91099	1.0977	1.3527	1.4849	40	
	30	9.4195	9.5111	91633	1.0913	1.3563	1.4802	130	
	40	9.4227	9.5082	92169	1.0849	1.3600	1.4755	20	
	50	9.4260	9.5053	92709	1.0786	1.3636	1.4709	10	
43	0	9.4292	9.5024	93251	1.0724	1:3673	1.4663	0	47
	10	9.4324	9-4995	93796	1.0661	1.3710	1.4617	50	11
	20	9.4356	9.4966	94345	1.0599	1.3748	1.4572	40	
	30	9.4387	9.4937	94896	1.0538	1.3786	1.4527	30	
- 174	40	9.4419	9.4907	95450	1.0476	1.3824	1.4483	20	
	50	9.4450	9.4877	96008	1.0416	1.3863	1.4439	10	
44	0	9.4482	9.4847	96568	1.0355	1.3902	1.4396	0	46
• •	10	9.4513	9.4818	97132	1.0295	1.3941	1.4352	50	•
	20	9.4544	9.4788	97699	1.0235	1.3980	1.4310	40	
	30	9.4575	9.4758	98269	1.0176	1.4020	1.4267	30	
1	40	9.4606	9.4728	98843	1.0117	1.4061	1.4225	20	
	50	9.4636	9.4697	99419	1.0006	1.4101	1.4183	10	45
		LogCo	Log.	Co.	Tang.	Co.	Secant		
		Ver.Si	Ver.Si	Tang.		Secant			

TABLE

TABLE VI. The Angles which every Rhumb, or Point of the Compass, makes with the Meridian.

North	South	Pts	0 / 11	North	South
N&E	SBE	0 14 10 0 10	2 48 45 5 37 30 8 26 15 11 15 0		S&W
NNE	SSE	1 4 1 ½ 1 ¼ 2 0	14 3 45 16 52 30 19 41 15 22 30 0		ssw
NE&N	SE&S	2 ¹ / ₄ 2 ¹ / ₂ 2 ³ / ₄ 3 0	25 18 45 28 07 30 30 56 15 33 45 0	NW&N	SW & S
NE	SE	3 14 3 12 3 4 4 0	30 33 45 39 22 30 42 11 15 45 00 0	N W	sw
NE&E	SEBE	4 4 4 12 4 4 5 0	47 48 45 50 37 30 53 26 15 56 15 0	NW&W	SW&W
ENE	ESE	5 5 5 6	59 3 45 61 52 30 64 41 15 67 30 0	WNW	wsw
EbN	E&S	6 4 6 1 6 3 7 0	70 18 45 73 07 30 75 56 15 78 45 0		W&S
EAST	EAST	7 7 7 7 7 8 0	81 33 45 84 22 30 87 11 15 90 00 0		WEST

TABLE VII. Of the Difference of Latitude and Departure.

_			100			-	+ Pa	oint.				1		_
Dift	Lat.	Dep. 1	Dift	Lat.	Dep.	Dif	Lar.	-	HD:A	Lat.	Dep.	Dift	Lat.	ID.
-	01.0	00.0	51	50.9	02.5	101	100.9	05.0	151	150.8	07.4	201	_	Dep.
2	02.0	00.1	52	51.9	02.6	02	101.9	05.0	52	151.8	07.5	02	200.8	
3	03.0	00.1	53	52.9	02.6	03	102.9	05.1	53	152.8	07.5	03	202.8	1 -9 9
4	04.0	CO.2	54	53.9	02.7	04	103 9	05.1	54	153.8	07.6	04	203.8	
5	05.0	00.2	55	54 9	02.7	05	104.9	05.2	55	154.8	07.6	05		
6	06.0	00.3	56	55.9	02.7	106	105.9	05.2	156	155.8	07.7	206	205.8	
7	07.0	00.3	57	56.9	02.8	07	106.9	05.3	57	156.8	97.7	07	206.8	
8	08.0	00 4	58	57.9	02.8	08	107.9	05.3	58	157.8	07.8	08		
9	09.0	00.4	59	58.9	02.9	09	108.9	05.4	59	158.8	07.8	09	208.7	10.3
10	10.0	00.5	60	59.9	02.9	10	109.9	05.4		159.8	07.9	10	209.7	10.3
11	11.0	00.5	61	60.9	03.0	111	110.9	05.5	161	160.8	07.9	211	210.7	10.4
12	12.0	00.6	62	61.9	03.0	12	111.9	05.5	62	161.8	08.0	12	211.7	10.4
13	13.0	00.6	63	62.9	03.1	13	112.9	05.5	63	162 8	08.c	13	212.7	10.5
14	14.0	00.7	64	63.9	03.1	14	113.9	05.6	64	163.8	08.1	14	1 - 1	
15	15.0	-	65	64.9	03.2	15	114.9	05.6	65	164.8	-	15	214.7	10,6
16	16.0	00.8	66	65.9	03.2	116	115.9	05.7	166	165.8	08.2	216		10.6
17	17.0		67	66 9	03.3	17	116.9	05.7	67	166.8	08.2	17	216.7	10.7
18	18.0	00.9	68	67.9	03.3	a service	117.9	05.8	68	167.8	08.3	18	217.7	
19	19.0	01.0	69	68.9	03.4	19	119.9	05.8	69	169.8	08.4	19	218.7	
20	-	-	70	69.9		-			70			20	2.1	10.8
21	21.0	01.0	71	70.9	03.5	121	120.9	05.9	171	170.8	08.4	221		10.9
22	22.0	1.10	72	71.9	03.5	22	121.9	06.0	72	171.8	08.5	22	221.7	10.9
23	23.0	-	73	72.9	03.6	23	123.9	06.1	73	172.8	08.5	23	222.7	11.0
25	25.0		74	73.9	03.7	25	124.9	06.1	74	174.8	08.6	24	223.7	11,0
26	26,0		75	74-9	_	126		06.2	75		08.6	25	224.7	11.1
	27.0		76	75.9 76.9	03.8	27	125.8	06.2	176	175.8	08.7	226	225.7	11.1
27	28.0		77	77.0	03 8	28	127.8	06.3	77	377.8	08.7	27	226.7	11.2
29	29.0		79	78.9	03.9	29	128.8	06.3	79	178.8	08.8	28	227.7	11.1
30	30.0		80	79.9	03.9	30	129.8	06.4	80	179.8	08.8	30	229.7	11.3
31	31.0	_	81	80.9	04.0	131	130.8	06.4	181	180.8	08:9	-	_	11.4
32			82	81.9		32	131.8	06.5	82	181.8	c8.9	233	230.7	11.4
33			83	82.9		33	132.8	06.5	83	182.8	09.0	32	232.7	11.5
34			84	83.9	04.1	34	133.8	c6.6	84	183.8	09.0	34	233 7	11.5
35		01.7	85	84.9	04.2	35	134.8	06.6	85	184.8	09.1	35	214.7	11.5
36		8.10	86	85.9		136	135.8	06.7	186	185.8	09 1	236	235.7	11.6
37			87	86.9	04.3	37	136.8	06.7	87	186.8	09.2	37	236.7	11.6
38			88	87.9	04.3	38	137.8	06.8	88	187.8	09.2	38	237.7	11.7
39		01.9	89	88.9		39	138.8	06.8	89	188.8	09.3	39	238.7	11.7
40	40.0	02.0	90	89.9	04.4	40	139.8	06.9	90	189.8	09.3	40	239.7	11.8
41	41.0		91	90.9	04.5	141	140.8	06.9	191	190.8	09.4	300	299.6	14-7
42	41.9	02.1	92	91.9	04.5	42	141.8	07.0	92	191.8				19.6
43	42.9	02.1	93	92.9	04.6	43	142.8	07.0	93	192.8	09.5	500		24-5
44	143-9	02.2	94	93-9	04.6	44	143.8	07.1	94	193.8	09.5	600		
4			95	94.9	04.7	45	144 8	07.1	95	194.8	09.6	700		34-3
46	45.9	02.3	96	95.9	04.7	146	145.8	07.2	196	195.8	09.6	800	799.0	39-3
47	46.9	02.3	97	96.9	04.8	47	140.8	07.2	97	196.8	09.7	900	898.9	44.2
48	47.9	02.4	98	97.9	04.8	48	147.8	07.3	98	197.8	09.7	1000	998.8	49.1
49					04.9		148.8	07.3	99			2000	1997.6	98.1
50		02.5	100		04.9	150		07.4	200				2996.4	4/-
Diff	Dep	Lat.	Dift	Dep.	Lit.	Dift	Dep.	Lat.	Dif	Dep.	Lat.	Dift.	Dep.	Lat

7 Foints.

	h-w-				. 3	Por	int.					-	- 1
Diff Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
101.0	00.1	51	50.8	05.0	101	100.5	09.9	151	150.3	14.8	201	200.0	19.7
2 02.0	00.2	52	51.8	05.1	02	101.5	10,0	52	151.3	14.9	02	201.0	19.8
3 03.0	00.3	53 54	52.7	05.2	03	102.5	10.2	53 54	153.3	15.1	03	202.0	19.9
5 05.0	00.5	55	54.7	05.4	05	104-5	10.3	55	154.3	15.2	05	204 C	20.1
6 06.0	00.6	<u>55</u>	55.7	05.5	106	105.5	10.4	156	155.3	15.3	206	205.0	20.2
7 07.0 8 08.0	00.7	57	56.7	05.6	07	106.5	10.5	57	156.2	15.4	07	206.0	27.2
8 08.0	00.8	58	57·7 58·7	05.7	08	107.5	10.6	58	157.2	15.5	08	207.0	20 3
9 09,0	10.0	59 60	58.7	05.9	10	109.5	10.8	59 60	159.2	15.7	10	209.0	20.4
10 10.0	01.1	61	60.7	06.0	111	110.5	10.9	161	160,2	1 - 5 - / 1	211	210.0	20.6
12 11.9	01.2	62	61.7	06.1	12	111.5	11.0	62	161.2	15.8	12	211.0	20.7
13 12.9	01.3	63	62.7	06.2	13	112.5	11.1	63	162.2	16.0	13	272.0	20.8
14 13-9		65	64.7	06.3	14	113.5	11.2	64	163.2	16.1	14	213.0	20.9
14 13.9 15 14 9 16 15.9				06.5	116	115.4	-	166	165.2	16.2	216	215.0	21.1
17 16.	01.7	67	66.7	06.6	17	116.4	11.4	67	166.2	16.3		216.0	21.2
18 17.0	01.8	68	67.7	06.7	18	117-4	11.5	68	167.2	16.4	17	217.0	21.3
19 18				06.7	19	118.4	11.6	69	168.2	16.0	19	217.9	21.4
20 19.0 21 20.		-11	1	06.9	121	120.4	-	70	-	1-	20	218 9	21.5
21 20. 12 21.	100	72			22	121.4		72	171.2	16.8	221	219 9	21.5
13 22.	02.5	1 73	72.6	07.1	23	122.4	12.0	1 73	172.2	16.9	23	221.9	
14 23.	9 02,			07.2	24	123.4	12.1	1 74			24	222.9	21.0
25 24. 26 25.	02:4				25	124-4		11/			25	223.9	-
26 25. 27 26.	9 03.	70	75.6		126	126.4			175.2	17.2	11	224.9	
28 27	0 02.	7 7		07.6		127			177.		41 -/	225.9	22.3
29 28.	9 02.	8 7	78.6	07.7	1 29	128.	1 12.6	1 -0	178.	17.5	1 29	227.9	22-4
30 29		- 11		_	_	129	_				11	228.0	
31 30	9 03.	8							181.			229.9	22.6
32 31 33 32	8 03.				32				182.			230.	
34 33	.8 03.	3 8	1 83.6	08.2	34		4 13.	1 8	1 183.	1 18.0	34	232.	
35 34	8 03	4 8	5 84 6	08.	35	134-		2 8	5 184.	1 18.	35	2334	
36 35	.8 03.	5 8	6 85.1	08.4	136	135.	3 13.	3 18		1 18.		234.	9 23.1
37 36 38 37	.8 03		7 86.0 8 87.0		37	136.			7 186.		311 37	225.	9 23 2
35 34 36 35 37 36 38 37 39 38						137.				1 18.	511 30	236.	
	.8 03		0 89.	6 08.		139.	3 13.	7 9		1 18.	40	238.	
41 40	.8 04	0 9	1 90	6 08.	14	140.		8 19			7 100		6 29.4
42 4				6 09.		141.			2 191.	1 18.	400	398.	1 39:2
44 4	1.8 04	-3 9	3 92.						3 192. 4 193				
45 4	1.8 04		5 94.				-				•	270	6 68.6
46 4	5.8 04	-5	6 95.	_				-11-	6 195	1 19.	-11		
4714	0.8 04	.6	7 96.	5 09.	5 4	7 146	3 14.	4 9	7 196	1 19.	3 900	895	7 8842
48 4	7.8 04	-7 9	8 97.	5 09.	6 4	8 147	3 14.	5 9	8 197			995	2 98.0
50 4	9.8 0	1 9 1	99 98.	5 00	311 5				9 198			1990	6 294.0
Dift	ep L	at. D	if De	p. Lat	10	A Dep	-	- 1	nt Dep		. D.A		
	- 1.2	-						"				P	
_		. 1				7 =	Pois	nis.					

11.1 11.2 11.2 11.3 11.4 11.4 11.5 11.5 11.5 11.6 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.7 11.8 14.7

				-	-	3	Poin		-					
Diff	Lat.	Dep.	_	Lat.	Dep.	Dift	Lat.		D.ft	~	-	Dift.	Lat.	Dep
	0.10	00.1	5i	50.4	07.5	101	99.9	14.8	151	149 4	22.1	201	198.8	29
- 1	02.0	00.3	52	51.4	07.6	C2	100.9	15.0	52	150.3	22.3	02	199.8	29
- 1	03.0	00.4	53	52.4	07.8	03	101.9	15.1	53	151.3	22.4	03	200.8	29
	04.0	00.6	54	53 4	07.9	04	102.9	15.3	54	152.3	22.5	05	201.8	29
	04 9	00.7	55	54 4		05	103.9	15.4	55	153.3	-	_	201.8	30
	05.9	00.9	56	55.4	08.2	106	104.8	15.5	156	154.3	22 9	206	203.8	30
8	06.9	01.0	57	56.4	08.4	08	105.8	15.7	57 58	155.3	23.0	08	204.7	30
	08.9	01.2	58	57 4	08.6	00	107.8	16.0	59	1 97.3	23.2	09	205.7	30
10	09.9	01.3	59	59.3	08.8	10	108 8	16.1	60	158.3	23.5	10	207.7	30
	_	01.6	61		08.9	-	109.8	16.3	161	159.2	23.6	211	208.7	-
11	10.9	01.8	62	61.3	09.1	111	110.8	15.4	62	160.2	23.8	12	200.7	39
13	11.9	01.9	63	62.3	09.2	13	111.8	16.6	63	161.2	23.9	13	210.7	31
14	13.8	02.1	64	63.3	09.4	14	112.8	16.7	64	162.2	24.0	14	211.7	31
15	14.8	02.2	65	64.3	09.5	15	113.7	16.9	65	163.2	24.2	15	212.7	31
-	15.8	-	66	65.3	09.7	116	114.7	17.0	166	164.2	24.3	216	213.7	31
16	16.8	02.5	67	66.3	09.8	17	115.7	17.2	67	165.2	24.5	17	214.6	
18	17.8	02.6	68	67.3	10.0	18	116.7	17.3	68	165.2	24.6	18	215.6	10
19	18.8	02.8	69	68.2	10.1	19	117.7	17.5	69	167.2	24.8	19	216.6	32
20	19.8	02.9	70	69.2	10.3	20	118.7	17.6	70	163.1	24.9	20	2176	
21	20.8	03.1	71	70.2	10.4	121	119-7	17.7	171	169.1	25.1	221	218.6	32
22	21.8	03.2	72	71.2	10.6	22	120.7	17.9	72	170 1	25.2	22	219.6	
23	22.7	03.4	73	72.2		23	121.7	18.0	73	171.1	25.4	23	220.6	32
24	23.7	03.5	74	73.2	10.8	24	122.7	18.2	74	172 1	25.5	24	221.6	32
25	24-7	03 7	75	74-2	11.0	25	123.6	18.3	75	173.1	25.7	25	222 6	33
26	25.7	03.8	76	75.2	11.1	126	124.6	18.5	176	174.1	25.8	226	223.5	33
27	26.7	04.0	77	76.2	11.3	27	125.6	18.6	77	175.1	26.0	28	224.5	33
28	27.7	04.1	78	77.1	11.4	28	126.6	18.8	78				225.5	33
29	28.7	04.3	79	78.1	11.6	29	127.6	18.9				29	226.5	33
30	29.7	04.4	80	79.1	11.7	30	128 6	-	80	178.0		. 30	227.5	3
31	30.7	04.5	81	80.1	11.9	131	129.6	19.2	181	179.0		231	228.5	33
32	31.7	04.7	82	81.1	12.0	32	130.6	19.4	82			32	229.5	34
33	32.6	04.8	83	82.1	12.2	33	131.6	19.5	83			33	230.5	34
34	33.6	05.0	84	83.1	12.3	34	132.5	19.6	84	182.0	27.0	34	231.5	34
35	34.6	05.1	85	84.1	12.5	35	133.5	19.8	_		27.1	35	232 4	34
36	35.6	05.3	86	85.1	12.6	136	134.5		186	184.0	27.3	236	2334	34
37	36.6	05.4	87	86.1	12.8	37	135.5	1	87			37	234-4	34
38	37.6 38 6	05.6	88	88.0	12.9	38	136.5		88		27.6	. 38	235.4	39
39	39.6	05.7	89	8q.c	13.0	39	137.5		90	1 0		39	237.4	35
40		05.9	90	-	-	40	_	-	1		_	-	296.8	4
41		06.0	91			141	139-5					300	395-7	1
7.31	42.5	06.2	92		13.5		140.5			189.9	28.3	500	494 6	171
43	43.5				13.8	43	141.4	21.1	93	101.0	28.5		593-5	85
44	44.5	06 6	95	94.0		45	143.4	21.3	95	192.0	28.6	700	692.4	101
		06.7	96	95.0	14.1	146	_	21.4	_	193.9	_	800	791.3	
46	45 5	00.9		95.9	14 2	47	144.4	21.6	196	194.9		900	890.3	132
47	47.5		98	96.9	14.4	48	146.4	21.7	98	195.8		1000	989.1	14
40	43.5	07 2		97.9	14.5	49	147-4	21.8	99		29.2	2000	1968.4	29
50	49.	07.2		98.9		150	148.4		200			3000	2967.6	440
U:ft	Dep.		_	D. p.						-		Dift.	Dep.	L
	B 6 6	- at .	in the	- bei			P.			- Cp.			1000	_

Γ				,-			1	Poin	t.		- 0-			
Dif	Lat.	Dep.	Dif	Lar			it Lat	De	p. D	اها إ	-	p. 1Dif	t. Lat.	Dep.
1	01.0	00 2	11 3			11	23				.1 29	5 20	1 197	-
3	02.0	00.4	52							2 149	1 3		198.	
4	03.9	00.8	54				- 1		11 3	4 151	1-2.	- 41	199.	1 30
5	04.9	01.0	55		10.	7 0			- 11 -	5 152	13-		5 201.	
6	05.9	01.2	56	54.9				0 20.		_	_	_	-	
7	06 9	01.4	57	55.5	11.		104.		9 5		13			4-1-
15.01	07.8	01.6	58					9 21.	1 5	8 154	9 30.	8 o		
9	08.8	01.8	59 60		11.					9 155				
	10 8	02.1	61	59.8			-/-	-	5 6	_	-	-	-	
	11.8	02.3	62											
	12.7	02.5	63	61.8						-		. 11		41.4
14	13.7	02.7	64	62.8	12.									
15	14 -	02.9	65	63.7	12.		112	22.						
	15.7	93.1	66	64.7		-		22.0	160	162.		- //	211.8	-
17		03.3	67	65.7			114.7	22.		163.	8 32.6			4
		03.5	68	66.7			115.7	23.0	11		7 32.8			
		03.7	69	63.6			116.7		11 3		100			
-	-	-	70	_	_	-	117-7	-			22	20	-	
		04.1	71	69.6	13.9		118.7		11 /	-6-		11		
		04.5	72 73	71.6	14.0	11	119.6		11 /			- 11	217.7	1
		04.7	74	72.6	14.4		121.6		11 /3			11 0		
	0 0	04.9	75	73.6	14 6		122 6					24	1 .	43.7
26	15.5	05.1	76	74.5	14.8		123.6		-				-	137
27 2		95.3	77	75.5	15.0		124.5	24.8	77	173.		27	222.6	44.1
	27.5	05.5	78	76.5	15.2	28	125.5	25.0		174.		28	223.6	
		05 7 H	79	77.5	154	29	126.5		79	175.		29	224.6	44.7
	-	05.9	80	78.5	15.6	30	127.5	25.4		176.	-	30	225.6	44.9
44 1		06.0	81	79.4	15 8	131	128.5	25.6	181	177.	1	231	226.5	45.8
4.1		6.4	82 83	80.4	16.0	32	129.5	25.8		178.	1000	32	227.5	45-3
4.1		6.6	84	82.4	16.4	33	130.4	26.1	83	180.4	1	33	228.5	45.5
35 3	14.7	6 8	85	83.4	16.6	35	132.4	26.3	45	181.4		34	229.5	45-7
16	5.3	7.0		84.3	16.8	130	133.4	26.5		182.4	13	236	-	46.0
37 3		7.2	87	85.3	17.0	37	134.4	26.7	87	183.4	36.5	37	231 4	46.2
38 3		7.4	88	86.3	17.2	38	135.3	26.9	88	184.4	36.7	38	233.4	46.4
		7.6	89	87.3	17.4	39	136.3	27.1	89	185.3	36.9	39	2344	46.6
	9.2			88.3	17.6	40	137.3	27.2	90	186.3	37 1	40	275.4	46.8
4	1.2 0	8.0	91	89.2	17.8	141	138.3	27.5	191	187,3	37-3	.300	294.2	58.5
3 4	220	8.4			18.4	42	139.3	27.7		188.3	37.5	400	392.3	78.0
4 4	3 2 0	8.6		91.2	18.3	43	140.2	27.9		190.2	37.7		490 4	97.5
	4.1 0	0 0 11		9312	18 5	45	142.2	28.3	94 95	191.2		700	686.6	117.0
6 4	5.1 0	6.0	96		18.7	-	43.2	28.5	196	192.2	38.2	800		
17 4	6.10	9.2	97	5.1	18.9		144.2	28.7	97	193.2		900	784.6	156.0
4	7.10	9.4	98	1.06	19-1		145.1	28.9	98	194.2		1000	980.8	195.0
9 4	8.10	96	99 9	7.1	19.3	49	146.1	29.1	99	195.2		2000	1961.6	190.0
# 10	9.0 O	901		1.8	19.5		147.1	29.3	200	196,1	39.0		2942 4	585.0
# 1º	COLL	di. No	inli	Dep.	Lat.	Dift	Dep.	Lat	Ditt	Dep.	Lat .	Ditt.	Dep.	Lat.
							7 Po	ints			-			
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Dift	Lat.	Dep	Dia	Lat.	Dep.	Dia	Lat.	Dep.	DiA	Lat.	Dep.	n Dift.	Lat.	Det
1	01.0	00.2	51	49.5	12.4	101	98.0	24.5	151	146.5	36.7	201	-	
2	01.9	00.5	52		12.6	02	98.9	24.8	52	147.4	36.9	02	1950	48
3	02.9		53	51.4	12.9	03	99.9	25.0	53	148.4	37.2	03	1 -33.	49
4	03.9	01.0	54	52.4	13.1	04	100.9	25.3	54	149.4	37.4	04		
5	04.9	01.2	55	53.4	13.4	05	101.9	25.5	_55	150.4	37-7	05		
6	05.8	01.5	56	54.3	13.6	106	102.8	25 8	156	151.3	37 9	206	199.8	
7 8	07.8	01.7	57	55.3	13.9	07	103.8	26.0	57	152.3	38.2	97	200.8	
9	08.7		59	56:3	14.1	08	104.8	26.2	58	153.3	38.4 38.6	0.8	201.8	50
10	09 7	02.4	60	58.2	14.6	10	106.7	26.7	60	154.2	38.9	09	202.7	
11	10.7	02.7	61	59.2	14.8	111	107.7	27.0	161	156.2	_	-	203.7	
12	11.6	02.9	62		15.1	12	108.6	27.2	62	157.1	39-1	211	204.7	
13	12.6	03.2	63		15.3	13	109.6	27.5	63	158.1	39.6	12	1 3	
14	13.6		64	62.1	156	14	110.6	27.7	64	159.1	39.9	14	100000	
15	14.6	03.6	65	63.1	15.8	15	111.6	27.9	65	160.1	40.1	15		
16	15.5	03.9	66	64.0	16.0	116	112.5	28.2	166	161.0	40.3	216	209.5	
17	16.5		67	65.0	16.3	17	113.5	28.4	67	162.0	40.6	17	210.	52,
18	17.5		68		16.5	18	114.5	28.7	68	163.0	40.8	18	211.5	53
19	19.4	04.6	69	67.9	16.8	19	115.4	28.9	69	163.9	41.1	19	212.4	53.
-	-	04.9	70	68.9	_	20	116.7	29.2	70	164.9	41.3	20	213.4	
21	21.3	05.1	71	69.8	17.3	121	117.4	29.4	171	165.9	41.6	221	2144	53
23	22.3	05.3	72	70.8	17.5	23	118.3	29.6	72	166.8	41.8	22	215.3	53
24	23.3	05.8	74	100	18.0	24	120.3	30.1	73 74	166.8	42.3	23	216.3	
25	24.3	06.1	75	72.8	18.2	25	121.3	30.4	75	169.8	42.5	24	217.3	54
26	25.2	06.3	76	73-7	18.5	126	122.2	30.6	176	170.7	42.8	226	-	54.
27	26.2	06.6	77	74.7	18.7	27	123.2	30.9	77	171-7	43.0	27	219 2	54.
28	27.2	06.8	78	75.7	19.0	28	124.2	31.1	78	172.7	43.3	28	221.2	
29	28.1	07.0		76.6	19.2	29	125.1	31.3	79	173 6	43.5	29	222.I	55.
30	29.1	07.3	80	77.6	19.4	30	126.1	31.6	80	174.6	43.7	30	223-1	55
31	30.1	07-5	81	78.6	19.7	131	127.1	31.8	181	175.6	44.0	231	224.1	56.
32		07.8	82	79.5	19.9	32	128.0	32.1	82	176.5	44.2	32	225.0	
33		08.0	83 84	80.5	20.4	33	129.0	32.3	83	177.5	44.5	33	226.0	56,
34	34.0	08.5	85	82.5	20,7	34	130.0	32.6	84	178.5	44.7	34	227.0	56.9
36	34.9	08.7	86	83.4	20.9	136			186	180.4	45.0	35		57-
37	35.9	09.0	87	84.4	21.1	37	131.9	33.0	87	181 4	45 2	236	228.9	57.
38	36.9	09:2	88	85.4	21.4	38	133.9	33.5	88	132.4	45.7	37	239 9	57.
39	37.8	09.5	89	86.3	21 6	39	134.8	33.8	89	183.3	45.9	39	231.8	38.1
40	38.8	09.7	90	87.3	21.9	40	135.8	34.0	90	184.3	46.2	40	232.8	58 1
41	39.8			88.3		141	136.8	34-3	191	185.3	46.4	300	201 0	72.2
42		10.2	92	89.2	22.4		137-7	34.5	92	180.2	46.7	400	388.0	97-1
43	41.7	10.4	93	90.2	22.6	43	138.7	34.7	93	187.2	46.9	500	485.0	121.4
44	42.7	10.7			23.8			35.0		188.2	47.1	600	582 0	145 8
		-		92.2	23.1	45	140.7	35 2	95	189.2	-	700	679.0	_
40	44.6	11.2	90	93 1	23.3	146	141.6	35.5	196	190.1	47.6	800	776.0	194 4
48	2 -	11.4	97	94-1	23.8	47	142.6	35.7	97	191.1	47.9	900	873.0	244.0
		11 9	99	96.c	24-1	48	144.5	26.2	98	192.1	48.4	2000	1940.0	486,0
	48 5	12,2		97.0	24.3		145.5	36.5	200	194 0	48.6	3000	2910.0	729 0
						-	Dep.	-		-	-	-	-	Lat.

6 3 Points.

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Diff Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.		Dift	Lat.	Dep.
1 01.0	00.1	51	48.8	14.8	101	96.7	29.3	151	144.5	43.8	201	192.4	58.3
101.9	00.6	. 52	49.8	15.1	02	97.6	29.6	52	145.5	44-1	02	193.3	58.6
0 02.9	00.9	53	50.7	15.4	03	98.6	29.9	53	146.4	44-4	03	194-3	58.9
4 03.8		54	51.7	15.7	04	99.5	30.2	54	147.4	44 7	04	195.2	59.2
5 04.8	01.5	55	52.6	16.0	05	100.5	30.5	55	148.3	45.0	05	_	59:5
6 05.7	01.7	56	53.6	16.2	106	101.4	30.7	156	149.3	45-2	200	197.1	59.7
7 06.7		. 57	54-5	16.5	07	102.4	31.0	57	150.2	45.5	07 c8	198.1	60.3
8 07-7	02.3	58	55.5 56.5	17.1	09	103.4	31.3 31.6	58	151.2	45.8	09	200.0	60.6
9 08.6		59 60	57.4	17.4	10	105.3	31.9	59 60	153.1	46.4	10	201.0	60.9
10 09.6		61	58.4	_	111	106.2	32.2	161	154.1	46.7	211	201.9	61.2
		62	50.4	17.7	12	107.2	32.5	62	155.0	47.0	12	202.9	61.5
11 124		63	59-3 60.3	18.3	13	108.1	32.8	63	156.0	47.3	13	203.8	61.8
13 12-4		64	61.2	18.6	14	109.1	33.1	64	156.9	47.6	14	204.8	62.1
		65	62.2	18 9	15	110.1	33.4	65	157.9	47 9	15	205.8	62.4
16 15.		66	63.2	19.1	116	111.0	33.6	106	158.9	48.1	216	206.7	62.6
17 16.	C4.9	67	64.1	19.4	17	112.0	33.9	67	159.8	48.4	17	207.7	62.9
18 17.		68	65.1	19.7	18	112.9	34 2	68	160.8	48.7	18	208.6	63.2
19 18.	2 05.5	69	66.0	20.0	19	113.9	34.5	69	161.7	49.0	19	209.6	63.5
20 19.		70	67.0	20.3	20	114.8	34.8	70	162.7	49.3	20	210.5	63.8
20 19.		71	67.9	20.6	121	115.8	35.1	171	163.6	49.6	221	211.5	64.1
12 2I.	1 06.4		68.9		22	116.8	35.4	72	164.6	49.9	22	212.5	64.4
23 22.			69.9	21.2	23	117.7	35.7	73	165.6	50.2	23	213.4	64.7
24 23.			70.8	21.8	24	118.7	36.0	74	167.5	50.5	24	214.4	65.0
25 23. 26 24.				_	25	119.0		75	168.4		226	216.3	
26 24.	9 07.5	76	72.7	22.0	126	120.6	36.5	176	169.4	51.0	27		65.5
27 25.	8 07.8	77	73.7	22.3	27	121.5	37.1	77 78	170.3	51.3	28	217 2	66.1
20 27		79	75.6	22.9	29	123.5	37.4		171.3	51.9	29	219.2	66 4
30 28.	7 08.7	80		23.2	30	124.4	37.7	79	172.3	52.2	30	220 1	66.7
31 29	_			23.5	131	125.4	38.0	181	173.2	52.5	291	221.1	67.0
32 30	6 09.1			23.8	32	126.3	38.3	82	174.2	52.8	32	222.0	67.3
33 31	6 09.6	7 11	79.4	24.1	33	127 3	38.6	83	175.1	53.1	33	223.0	67.6
34 32		84	80.4	24.4	34	128.2	38.9	84	176.1	53.4	34	223.9	67.9
		85	31.3	24.7	35	129.2	39.2	85	177 0	53-7	35	224 9	68.2
35 33 36 34	5 10.4	86		24.9	136	130.2	39.4	186	178.0	.53.9	236	225.9	68-4
37 35	4 10.	87	83.3	25.2	37	131.1	39.7	87	1790	54.2	37	226.8	68.7
38 36			84.2	25.5	38	132.1	40.0	88	179.9	54.5	38	227.8	69.0
39 37		2 11 -	107		39	133 0	40.3	89	181.5	54.8	39	228.7	69.3
40 38	3 11			26.1	40	134 0	40.6	90	1.00	55.7	40	229,7	69 6
49 40			100	1 - 6 -	141	134.9	40.9	191	182.8	55.4	300	287.1	87.1
42 40	2 12.	92	88.0	20.7		135.9	41.2	92		\$5.7	400	302.0	116.1
44 42	.2 12.	93	90.0	27.0	43	130.9	41.5	93	185.7	56.3	500		174-2
45 42	.1 13			27.6		137.8	42.1	95	102.1	56 6	700		203.2
46 44	-0 -0	7					_		-		-		232.2
47 4	13	3 96		27.8		139.7	42.6	196	188.5		900		261,
4814	.9 13.	97	93.8			141.6	42.0	97	180.5	57.4		916.0	290.
49140	0 114	2 00		1-8 -	49	142.6	43.2	99			2000	1913.8	580.4
50 4·	1.9 14.	5 100	95.7	29.0	150	143.5	43.5	200	191 4	58.0		2870.7	870.6
Ditt	p. Lat	Diff	'en	Lac.			Lat	11	1				Lat.
Ditt	14. p. Lat	. Diff	'ep.	Lat.			Lat.	Diff	D.p.		Dift.	Dep.	

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Dif	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat,	Dep.
-,	00.9	co.3	51	48.0	17.2	101	95.1	34.0	151	142.2	50.9	201	189.2	67.
2	01.0	00.7	52	49.0	17.5	02	96.0	34.4	52	143.1	51.2	02	190.2	68.
3	02.8	0.10	53	49.9	17.9	03	97.0	34-7	53	144.0	51.5	03	191.1	68.
4	03.8	01.3	54	50.8	18.2	04		35.0	54	145.0	51.9	04	192.1	68.
5	04.7	01.7	55	51.8	18.5	05	98.9	35.4	55	145.9	52.2	05	103.0	69.0
6	05.6	02.0	56	52.7	18.9	106	99.8	35.7	156	146.9	52.5	206	194.0	69.4
7	06.6	02.4	57	53.7	19.2	07	100.7		57	147.8	52 9	07	194.9	69.7
8	07.5	02.7	58	54.6	19.5	08	101.7	36.4	58	148.8	53.2	08	195.8	70.1
9	08.5	03.0	59	55.5	19.9	09	102.6		59	149.7	53.6	09	196.8	70.4
10	09.4	03.4	60	:6.5	20.2	10	103.6	37.0	60	150.6	53.9	10	197.7	70.7
11	10.4	03.7	61	57.4	20.5	111	104.5	37.4	161	151.6	54.2	211	198.7	71.1
12	11.3	04 0	62	58.4	20.9	12	105.4	37-7	62	152.5	54.6	12	199.6	71.4
: 13	12.2	04.4	63	59.3	21.2	13	106.4	38.1	63	153.5	54.9	13	200.5	71.7
14	13.2		64	60.3	21.6	14	107.3	38.4	64	154.4	55.2	14	201.5	72.1
15	14.1	05.1	65	61.2	21.9	15	108.3	38.7	65	155.3	55.6	114	202.4	72.4
16	15.1	05.4	66	62.1	22.2	116	109.2	39.1	166	156.3	55.9	216	203.4	72.7
17	16.0	05.7	67	63.1	22.6	17	110.2		67	157.2	56.2	17	204.3	73-1
18	17.0	06.1	68	64.0	22.9	18	111.1	39.7	68	158.2	56.6	18	205.2	734
19	17.9	06.4	69	65.0	23.2	19	112.0		69	159.1	56.9	19	206.2	73.8
20	18.8	06.7	70	65.9	23.6	20	113.0	40.4	70	160.1	57.3	20	207.1	74:1
-	19.8	07.1	71	66.8	23.9	121	113.9	40.8	171	161.0	57.6	221	208.1	74.4
21	20.7	07.4	72	67.8	24.2	22	114.9		72	161.9	57.9	22	209.0	74.8
22	21.7	07.7	73	68.7	24.6	23	115.8		73	162.9	58.3	23	210.0	75.1
23	122.6	08.1	74	69.7	24.9	24	116.7		74	163.8	58.6	24	210.9	754
25	23.5	08.4	75	70.6	25.3	25	117.7	42.1	75	164.8	58.9	25	211.8	75.8
26			76	71.6	25.6	126	118.6	42.4	176	165.7	59-3	226	212.8	76.1
	24.5		77	72.5	25.9	27	119.6		77	166.6	59.6	27	213.7	76.5
27	25.4	09.4	78	73.4	26.3	28	120.5		78	167.6	60.0	28	214.7	76.8
29	27.3		79	74.4	26.6	29	121.5	1	79	168.5	60.3	29	215.6	77-1
	28.2	10.1	80	75.3	26.9	30	122.4		80	169 5	60.6	30	216.5	77.5
30	-	-	81	76.3	27.3	131	123.3		181	170.4	61.0	231	217.5	77.8
31	30.1	10.4	82	77-2	27.6	32	124.3		82	171.4	61.3	32	218.4	78.1
32	31.1	11.1	83	78.1	28.0	33	125.2		83	172.3	616	33	219.4	78.9
33	32.0		84	79.1	28.3	34	126.2		84	173.2	62.0	34	220.3	78.8
34	33.0	2	85	80.0	28.6	35	127.1	1.0	85	174.2	62.3	35	221.3	79 1
35	-	-	86	81,0	29.0	136	128.0		186	175.1	62.6	236	222.2	79-5
36	33.9	12.1	87	81,9	29.3	37	129.0	1.2	87	176.1	63.0	37	223.1	.79.8
37	35.8	12.8	88	82.8	29.6	38	129.4	1 .	88	177.0	63.3	38	224.1	\$0.2
38	36.7	13.1	89	83.8	30,0	39	130.9	1 - 2	89	177.9	63.7	39	. 225.0	80.
39	37.7	-	90	84.7	30.3	40	131.8		90	178 9	64.0	40	226.0	80.
		13.8	91	85.7	30.6	_	132.8		101	179.8	64.3	300	282.5	101.
41	30.0					42	133.7		92	180.8	64 7	400	376 6	134.
	39.5	14.1	02		31.3	1 42	134.6	148.2	93	131.7	65.0	500	470.8	100.4
43	11 - 7		04	88.5	31.7	44	135.0	148.5	94	182.6	65.3	600	564.9	201.
44		15.2	95	89.4	32.0	45	136.5	48.8	95	183.6	65.7	700	659.1	236.
45	42.4	_							196			_	753.2	269
	43.3	15.5		90.4	32.3			49.5	97	185.5	66.3		847-4	303
47	44-3	158	97 98	92.3	32.7	48			98	186.4	66.7	1000	941.5	336.
48	45.2	16.2	99		33.0	49	140.2	50.2		187.4	67.0	2000	1883.0	673
49		16.8	100	94.2	33.7	150	141.2	150.5	1200	188 3	67.4	3000	2824-5	1010
50	47.1			Dep.			Dep.	Lat.	Vift	Dep.	Lat.	Dift	Dep.	Lat.
Diff	Dep.	Lat.	Ditt	Deb.	Lat.	1 mile	Deb.	lear.	1	L.				

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Points.

F							2 P	ints.			10.70	7		
Di	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dift.
1-	00.9	00.4	51	47.1	19.5	101	93.3	38.7	151	139.5	57.8	201	185.7	76.9
1	01.8	00.8	52	48.0	19.9	02	94.2	39.0	52	140.4	58.2	02	186.6	77-3
	02.8	01.1	53	49.0	20.3	03	95.2	39-4	53	141.4	58.6	03	187.6	77.7
	4 03.7	01.5	54	49.9	20.7	04	96.1	39.8	54	142.3	58.9	04	188.5	78.1
-	6 05 5	01.9	55	50.8	21.0	05	97.0	40.2	55	143.2	59.3	05	189.4	78.5
		02.3	56	51.7	21.4	106	97.9	40.6	156	144.1	59.7	206	190.3	78,8
	7 06.5	02.7	57 58	52.7	21.8	08	98.9	41.0	57	145.1	60.1	07	191.3	79.2
100	1 2	03.1	59	54.5	22.6	09	99.8	41.7	58	146.0	60.5	80	192.2	79.6
Ш,		03.8	60	55.4	23.0	10	101.6	42.1	59 60	146.9	60.9	10	193.1	80,0
HS.	1 10.2	04.2	61	56.4	23.3	111	102.6	42.5	161	148.8	61.6	-	194.0	
	2 11.1	04.6	62	57.3	23.7	12	103.5	42.9	62	149.7	62.0	12	194.9	80,8
121	3 12.0	05,0	63	58.2	24.1	13	104.4	43.2	63	150.6	62.4	13	195.9	81.5
	4 12.9	05.4	64	59.1	24.5	14	105.3	43.6	64	151.5	62.8	14	197:7	81.9
Ш	5 13.9 6 14.8	05.7	65	60.1	24.9	15	106.3	44.0	65	152.5	63.1	15	198.6	82.3
		06.1	66	61.0	25.3	116	107.2	44.4	166	153.4	63.5	216	199.6	82.7
	7 15.7	06.5	67	61.9	25.6	17	108.1	44.8	67	154.3	63.9	17	200.5	83,0
	18 16.6	06.9	68	62.8	26.0	14	109.0	45.2	68	155.2	64.3	18	201.4	83.4
	19 17.6	07.3	69	63.8	26.4	19	109.9	45.5	69	156.1	64.7	19	202.3	83.8
B.		07.7	70	64.7	26.8	20	110 9	45.9	70	157.1	65.1	20	203.3	84.2
	19.4	08.0	71	65.6	27.2	121	111.8	46.3	171	158.0	654	221	204.2	84.6
	2 20.3	08.8	72 73	66.5	27.6	22	112.7	46.7	72	158.9	65.8	22	205.1	85.0
	4 22.2	39.2	74	68.4	28.3	24	113.6	47.2	73	159.8	66.2	23	206.0	85.3
и	15 23.1	09.6	75	69.3	28.7	25	115.5	47.8	74 75	160.8	66.6	24	207.0	86.1
н	15 23.1 16 24.0	10.0	76	70.2	29.1	126	116.4	48.2	176	162.6		25	207.9	Annual Control
	27 24.9	10.3	77	71.1	29.5	27	117.3	48.6	77	163.5	67.4	226	208.8	86,5
	18 25.9	10.7	78	72.3	29.9	28	118.3	49.0	78	164.5	68.1	27	209.7	86.9 87.3
	29 26.8	11.1	79	73.0	30.2	29	119.2	49.4	79	165.4	68.5	29	211.6	87.6
н.	30 27.7	11.5	80	73.9	30 6	30	120.1	49.8	80	166.3	68.9	30	212.5	88,0
	31 28 6	11.9	81	74.8	31.0	131	121.0	50.1	181	167.2	69.3	231	213.4	88,4
	32 29.6		82	75.8	31.4	32	122.0	50.5	82	168.2	69.7	32	214.4	88.8
	33 30 5 34 31.4	12.6	83	76.7	31.8	33	122.9	50.9	83	169.1	70.0	33	215.3	89.2
	34 31.4 35 32.3		84	77.6	32.1	34	123.8	51.3	84	1700	70.4	34	216.2	89.6
1		13.4		78.5	32.5	35	124 7	51.7	85	170.9	70.8	35	217.1	89.9
	30 33·3 37 34·2	13.8	86	79.5	32.9	136	125.7	52,0	186	171.9	71 2	236	218.0	90.3
	38 35.1	14.5	88	81.3	33.3	37	126.6	52.4	87 88	172.8	71.6	37	210.0	90.7
1	39 36.0	14.9	89	82.2	34.1	39	127.5	53.2	89	173.7	72.0	38	219.9	91.1
	40 37.0		90	83.2	34.4	40	129.4	53.6	90	175.6	72.3	39	220.8	91.5
	41 37 9 42 38.8	15.7	91	84.1	34.8	141	130.3	54.0	191	176.5			-	
4		15.7	02	85.0	35 2	42	131.2	54-3		177.4	73.1	300	160.	114.8
	43 39 7	16.5	93	85.9	25.6	43	132.1	54.7	93	178.3	73.5	500	369.5	153.1
	44 40.6		94	86.9	140.0	44	133.0			179.2	74.2	600	554-3	229.6
	45 41.6	_	96	87.8	36.4	45	134.0		95	180.2	74.6	700	646.7	267.0
ł	46 42.	17.6	96	88.7	30.7	146	134.9	55-9		181.1	75.0	800	739.1	306.2
	47 43.4			89.6	37 1	47	135 8	156.3	97	182.0	75.4		831.5	344-4
	49 45.	118.8		90.6	37.5	48	130.7	56.6		182.9	75.8	1000	923.9	382.7
	50 46	19.1	99	91.5	37.9	49	137.7	57.0	99	183.9	76 2		1847.8	765.4
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9	1 6					178	98.	\$ 46.6	59		68.0	00	188.	80.
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11	09.9	04.		100	26.1	111		47.5		1			190.	90.
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25	22.6	10.	7 75			-		51.5			74.8			96.1
26	1 3 3		11 .	10							75.3			96.6
27		111			1 .				11 0		1000		205.2	97.1
29		12.4				29	1		11 '	1 . 5	76.5			97-9
30								1			77.0			98.3
31		13.	81	73-2	34.6		-	56.0	184		77-4		0.0	98.8
32		13.	82				119.3	56.4	82			32	209.7	99.1
33				75.0	1	11			83	165.4	78.2	-	210.6	99.6
34									85	167.2	79.1	34	212.4	100.5
35			-11-2			-	-	-3	186		79.5	230	213.3	100.9
37	33.4								87		80.0	37	214.2	101.1
38	34-4	16.2		1 , 3	37.6		124.7	53.0	88	169.9	80.4	38	215.1	101.8
39		16.7	-	10-		39	125.6	59.4	89	170.8	80.8	39	216.0	102.2
40	30.2	17.1	-			40	116.5	59.9	90	171.7	81.2	40	271.2	128.3
41	37.1	17.5		82.3	38.9	141	127.4		191	172.6	81.7	300 400	361.6	171.0
42	38 9	18.4	93	84.1	39.3	43	128.4	61.1	92	174.5	82.5	500	452.0	213.8
44	39.8	18.8	94	85.0	40.2	44	130.2	010	94	175.4	83.0	600	542 4	256.5
45	40 ?	19.2	95	85.9	40.6	45	131.1	62 0	95	176 3	83.4	700	632.8	299-3
46	41.6	19.7	96	86.8	41.0	146	132.0	62.4	190	177.2	83.8	800	723.2	342.0
	42.5	30.1	97	87.7		47	132.9	62.9	97	178.1	84.7	900	904:0	427.6
		20.5	98	88.6	41.9	48	133.8	63.7	98	179.0	85.2	2000	1808.0	855.2
		21.4		90.4	42.8	150	135.6	64.1	200	180.8	85.5	3000		1282.8
		_	Dift		Lat.	Dut		Late	Dift	Dep.	Lat:	Dift.	Dep.	Lat.
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niA.	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep	Dift	Lat.	Dep.	Unft.	Lat.	Dep.
-	00.9	00.5	51	45.0	24.0	101	89.1	47.6	151	133.2	71.1	201	177.3	94.7
	01.8	00.9	52	45.9	24 5	02	90.0	48.1	52	134.1	71.6	02	178.2	95.2
		01.4	53	46.7	25.0	03	90.8	48.5	53	134.9	72.1	03	179.0	95.6
3	03.5	01.9	54	47.6	25.4	04	91.7	49.0	54	135.8	72.6	04	179.9	96.1
7	04-4	03.4	55	48.5	24.9	05	92.6	49.5	55	136 7	73.0	05		
-6	05.3	02.8	56	49.4	26.4	106	93-5	49.9	156	137.6	73.5	206	181.7	97-1
	06.2	03.3	57	50.3	26.9	07	94.4	50 4	57	138.5	74.0	97	182.6	97.5
8	07.1	03.8	57 58	51.2	27.3	08	95.3	50.9	58	139.4	74.4	08	183.5	98.0
	07.9	04.2	59	52.0	27.8	09	96.1	51.4	59	140.2	74 9	09	184.3 185.2	98.9
10	08.8	04.7	60	52.9	28.3	10	97.0	51.8	60	141.1	75.4	10	_	-
11	09.7	05.2	61	53.8	28.7	111	97.9	52.3	161	142.0	75.9	211	186.1	99.4
11	1 4	05.7	62	54.7	25.2	12	98.8	52,8	62	142.9	76.3	12	187.0	99.9
11	100 0		63	55.6	29.7	13	99.7	53.2	63	143 8	76.8	13	187.9	100.4
1	1	06.6	64	56.4	30.2	14	100 5	53.7	64	144.6	77.3	14	189.6	101.3
		07.1	65	57.3	30.6	15	101.4	54.2	.65	145.5	77.7	15		
1	14.1	07.5	66	58.2	31.1	116	102.3	54.7	166	146.4	78.2	216	190.5	101.8
1	15.0	08.0	67	59.1	31.6	17	103.2	55.1	67	147.3	78.7	17	191.4	102.2
1	15.9	08.5	68	60.0	32.0	18	104.1	55.6	68	148.2	79.2	18	192.3	102.7
1		09.0	69	60.9	32.5	19	105.0	56.5	69	149.1	79.6	19	193.2	103.2
2	17.6	09.4	70	61.7	33.0	20	105.8		70	149.9	80.1	20		103.7
1	18.5	09.9	71	62.6	33.5	121	106.7	57.0	171	150.8	80.6	221	194.9	104.1
2		10.4	72	63.5	33.9	22	107.6	57.5	72	151.7	81.0	22	195.8	104.6
3		10.8	73	64.4	34.4	23	108.5	58.0	73	152.6	81.5	23	196.7	105.1
P		11.3	74	65.3	34.9	24	109.4	58.4	74	153.5	82.0	24	198.4	105.5
2	32.1	11.8	75	66.2	35.3	25	110.3	58.9	75	154.3	82.5	25		
1	6 32.9	12.3	76	67.0	35.8	126	111.1	59.4	176	155.2	82.9	226	199-3	106.5
		12.7	77	67.9	36.3	27	112.0	59.8	77	156.1	83.4	27	200.2	197.0
2	8 24.7	13.2	78	68.8	36.8	28	112.9	60.3	78	157.0	83.9	28	201.1	107.4
3	9 25.6	13.7	79	69.7	37.2	29	113.8	60.8	79 80	157.9	84.3	29	202.9	107.9
31 3	30.5	14-1	80	70.6	37-7	30	114.7	61.3	_	-	84.8	30	-	_
1	1 37.3		81	71.4	38.2	131	115.5	61.7	181	159.6	85.3	231	203.7	108.8
3	2 28.2		82	72.3	38.6	32	116.4	62.2	82	160.5	85.8	32	204.6	109.3
3	3 29-1	1 2 0	83	73-2	39.1	33	117-3	62.7	83	161.4	86.2	33	205.5	109.8
3	4 30.0	16,0	84	74-1	39.6	34	118.2	63.1	84 85	163.2	87.7	34	207.3	110.7
2	30.9		85	75.0	40.1	35	119.1	63.6			87.2	35		-
3	6 31.8		86	75.9	40.5	136	120.0	64.1	186	164.1	87.6	236	208.2	111.2
3	7 32.6		87	76.7	41.0	37	120.8	64.5	87	164.9	88,1	37	209.0	111.7
	8 33-		88	77.6	41.5	38	121.7	65.0	89	166.7	88.6	38	209.9	112.1
E	9 34-4		89		41.9	39	122.6	65.5		167.6	89.1	39	211.7	2007100
ľ	35.	18,8	90		42.4	40	123.5	66.0	90		_	40		113.
			91	80.3	42.9	141	124-4	66.4	191	168.5	90.0	300	264.6	188.
K	37.0	19,8	92	81.1	43.4	42	125.2	66.9	92	109.3		400		
Б	3 37.	20.3	93	82.0	43.8	43	120.1	67.4		170.2		500	521.1	
ľ	4 38.	20.7	94		4443	44	127 0	69.0	94	171.1				
ŀ	39.	21,2	95				127.9		95	172.0	-	700		
1	40.	21.7	96	84.7	45.2	146	128.8	68.8	196	172.9		800	705.5	
1	7 41.	32.1	97	85 6	45.7	47		69.3	97	173.8		900	793.7	
1	18 42.		98	80.4	46.2	48	130.5		98	174.6	93.3	1000	881 9 1763.8	471.
1	19 43	2 23.1	99	07.3	46.6		131.4		99		93.8	2000	2614.7	942.
1	10 th	1 23.6 Lat.		88.2	47-1	150	132 3	70.7	200	10.4				
		Lat.	ILLDiff	Dep.	Lac.	ILDIR	Dep.	Lat.	IIIVIII	Dep.	Lat.	חועוו.	Dep.	Lat.

		-		w	-		_	2 3	Poin	ts.		Puri	-		
Dift	Lat.	עו	ep.	Dift	Lat.	Dep.	[]Dift		[Dep.		Lat.	Dep.	Dift.	Llas	10
7	00.9	_	0.6	51	-	26.2	101	86.6							Dep
2	01.7		1.0	52	43.7	26.7	02		51.9					-/	
3	02.6		1.6	53	45.5	27.2	03		52.4		130.4			.,3	
4	03.4		2.1	54	46.3	27.8	04			1	1				
5	04.3		2.6	55	47.2	28.3	05				132.9	1 , 0	04		
6	05.1	16	3.1	56	48.0	28.8	106		-		-		-		-
7	06.0		3.6	57	48.9	29.3	07	91.8	10.0		134.7				
8	06.9		4.1	58	49.7	29.8	08				-35-5		0		
9	07:7		4.6	59	50.6	30.3	09				136.4		00		
10	08.6	9	5.1	60	51.5		10				137.2		10		107
11	09 4	10	5.7	61	52.3	31.4	111	95.2			138.1				
12	10.		6.2	62	53 2		12		57.6	62			12		109.
13	11.2		6.7	63	54 0	32.4	13		58. I	63	139.8	83:8	1		109.
14	12.0		7.2	64	54.9		14	97.8	58.6	64	140,7	84.3	14		110
1,5	12.0	3 -	7 7	65	55.8		15	98.6	59.1	65	141.9	84 8	,1	184.4	110
16	13.		8.2	66	56.6	33.9	116	99.5	59.6	166	142.4	85.3	216		
17	14.0		8.7	67	57.5		1 17		12	67	143.2	85.8	17	186.1	111.
18	15.4		9.3	68	58.3	35.0	18	101.2					18		1112
19	16.		9.8	69	59-2	1333	19		61.2	11 - 3	145.0		19	187.8	1112.
20	17.2		10.3	70	60.0	1	20		-	70	145.8				-
21	18.0		108	71	60.9		121		62.2	171	146.7	87.9	221	189.6	113.
22	18.9		1.3	72	61.8	13/	22			72	147-5	88.4	22		
23	20.6		1.8	73	62.6		23	100			148.4			191.3	114
24	21.4		2.3	74	64.3	38.0	24				149.2		24		
_	-	.,-		75	-	-	25			-	150.1	-		-	115.0
26	23.2		3 4	76	66.0		126	108,1	64.8		151.0				116.
27	24.0		4.4	77	66.0	39.6	27	108 9		77	151.8				116.7
29	24.0		4.9	79	67.8	40.1	28	109.8			152.7				
30	25.7	4 6	5.4	80	68.6	41.1	30			79 80	154.4			1	117.7
31	26.6	3 6	5.9	81	69.5	41.6	1	20.00				_	-	-	118.7
32	27.4		6.4	82	70.3	42.1	131	112.4		181	155.2				
33	28.		7.0	83	71.2	42.7	32	114.1	68.4	83	157.0				119.2
34	29:		7:5	84	72.0	43.2	33	114.9	68.9	84	1 57.8		33	200.7	120-3
35	300		8.0	85	72.9	43.7	15	115.8		85			35	201.6	120.8
36	30,0	16	8.5	86	73.8	44.2	136	116.6	69.9		159.5		236	_	121.1
37	34.7		9.0	87	74.6	44.7	37	117.5	70.4	87	160.4			203.3	121.8
38	32.6	1	9.5	88	75.5	45.2	38	118.4	70.9		161.2		37	204.1	123.3
39	334	4	0.0	89	76.3	45.7	39	119-2	71.4	89	162.1		39	205.0	122.8
40	34-3	1 3	0.6	90	77.2	46.3	40	120-1	72.0	90	163.0	97.6	40	205.8	129.3
SECRETARY.	3512		1.1	91	78.1	46.8	141	120.0	72.5		163.8		300	7 - 6 7	154.3
42	36.0	2	1.6	92	78.9	47.3 47.8	42	121.8		92	164.7	98.7	400	343-1	205.6
43				93	79.8	47.8	43	122.7	73.5	93	165.5	99.1	500	428.9	257.1
44	37-7		2.6	94	90.0	48.3	44	123.5	74.0	94	166.4	99.7	600	514.6	308 5
45	38 6		3.1	95	81.5	48.8	45	124.4	74 6	95	167.3	100.2	700	600.4	359-9
46	39-5	2	3.6		82.3	49.3	146	125.2	75.0	196	168.1	100.7	800	686.2	411.3
47		3	4.2	97	83.2	49.9	47	126.1	75.6	97		101.2	900	773.0	462.7
48	41.2	100	4.7	98	84.1	50.4	48	126.9	76.1	98	169.8	8,101	1000	857-7	514-1
49			5.2	99	84.9	50.9	49	127.8	76.6	99	170.7		2000	1715.4	1018.1
50	42,9		5-7	100	85.0	51.4	150	128 7	77.1	200	171.5	102.8	3000	2573.1	1542-1
Jut	Dep	·1r	at.	Dift	Dep.	Lat.	Dift	Dep.	Lat.	Diff	Dep.	Lat.	Dift,	Dep.	Lat.
1.		-						5 1 1	Point	s.					

						3 Pa	ints.						-
A Lat.	Dep.	Dia	Lat.	Dep.	Dift	Lat.	Dep.	Dia	Lat.	-	Dift.	Lat.	Dep.
1 00.8	00.0	51	42.4	28.3	101	84.0	56 1	151	125.5	83.9	201	167.1	111.
2 01.7	1.10		43.2	28.9	03	84.8	56.7	52	126.4	84.4	02	167.9	112.
103.5	01.7	53	44.1	29.4	03	85.6	57.2	53	127.2	85.0	03	168.8	112.
4 03.3	02.2	54	44.9	30.0	04	86.5	57.8	54	128.0	85.5	04	169.6	113.
104.2	02.8	55	45.7	30.6	05	87.3	57-3	55	128.9	86.1	05	170.4	113
6 05.0	03.3	56	46.6	31.1	106	88.1	58.9	156	129.7	86.7	206	171.3	114.
	03.9	57	47.4	31.7	07	89.0	59-4	57	130.5	87.2	07	172.1	115.
7 05.8	04 4	58	48.2	32.2	08	89.8	60.0	58	131.4	87.8	08	172.9	115
0 07.5	05.0	59 60	49.1	32.8	09	90.6	60.5	59 60	132.2	88.3	09	173.8	116
10 08.3	05.6		49.9	33-3	10	91.4	61.1	_	133.0	88.9	10	174.6	116
11 09.1	c6.1	61	50.7	33.9	111	92.3	61.7	161	133.8	89.4	211	175.4	117.
12 10.0	06.7	62	51.5	34-4	12	93.1	62.2	62	134.7	90.0	12	176.2	117
13 10.8	07.2	63	52.4	35.0	13	93.9	62.8	63	135.5	90.5	13	177.1	118.
14 11.6	07.8	64	53.2	35.6	14	94.8	63.3	64	136.3	91.1	14	177.9	118
16 13.3	08.3	65	54.0	36.1	15	95.6	63.9	65	137.2	91.7	.15		119
16 13.3	08.9	66	54-9	36.7	116	96.4	64.4	166	138.0	92.2	216	179.6	120.
17 14-1	09.4	67 68	55.7	37.2	17	97.3	65.0	67	138.8	92.8	17	180.4	120
18 15.0	10.0	68	56.5	37.8	18	98.1	65.5	68	139-7	93.3	18	181.2	121
19 15.8	10.6	69	57.4	38.3	19	98.9	66.1	69	140.5	93.9	19	182.9	121
20 16.6		70	58.2	38.9	20	99.8	66.7	70	141.3	94-4	20		122
21 17.5	11.7	71	59.0	39-4	121	100.6	67.2	171	142.2	95.0	221	183.7	122
21 18.3		72	59.9	40.0	22	101.4	67.8	72	143.0	95.5	22	184.6	123
13 19.4	12.8	73	60.7	40.6	23	102.3	68.3	73	143.8	96.1	23	185.4	123
14 20.0		74	61.5	41.1	24	103.1	68.9	74	144-7	96.7	24	187.1	124
25 20.8	37	75	62.4	41.7	25	103.9	69.4	75	145.5	97.2	25		125
	14.4	76	63.2	42.2	126	104.8	70.0	176	146.3	97 8	226	187-9	135
27 22.4	15.0	77 78	64.0	42.8	27	105.6	70.5	77	147.1	98.3	17	188.7	120
28 23.3	15.6	78	64.8	43.3	28	106.4	71.1	78	148.0	98.9	28	190.4	126
29 24.1	16.1	79	65.7	43.9	29	107.2	71.7	79 80	149 6	99.4	29	191.2	127
30 24-9	10.7	80		44.4	30	_	72.2			-	30	_	
31 35.8		81	67.3	45.0	131	108.9	72,8	181	150.5	100.5	231	192.0	128
32 26.6		82	68.2	45.6	32	109.7	73.3	82	151.3	101.1	32	192.9	128
13 27-4 34 28.3	18.3	83	69.0	46.1	33	110,6	73-9	83	152.1	101.7	33	193.7	139
34 28.1		84		46.7	34	111.4	74-4	84	153.8	102.2	34	195.4	130
-	-	85	70.7	47-2	35	-	75.0	45	154.6	_	35	196.2	
36 29.9	20.0	86	71.5	47.8	136	113.1	75.5	186	154.0	103.3	236		131
37 30.5 38 31.		8 ₇ 88	72.3	48.3	37	113.9	76.7	87 88	155.5	103.9	37 38	197.0	131
39 32.4	1 1 7 7	88	73.2	48.9	38	114.7	77.2	89	157.1	105.0	39	198.7	132
		89	74.8	50.0	39	116.4	77.8	90	1 58.0	105.5		199.5	133
Real Property		90			40	-		-	158.8	106.1	40		166
		91	75.7	50.6	141	117.2	78.3 78.9	191	150.6	106.7	300	249.4	200
43 26	23.3	92	76.5		42	118.1	79.4		159.6	107.2	500	415.7	277
44 36.	6 24 4	93	78.1	51.7	43	119.7	80.0	93	161.3	107.8	600	498 9	333
45 37-		94 95	79 0	52.8	45	120.5		95	162.1	108.3	700	582,0	388
46 38.	100	37		_		-	_		162.9	108.9	800	665.2	
47 20	2 25.0	96	79.8	53-3	146	121.4	81.7	196	163.8	109.4	900	748.3	500
48 39	9 26.7	97	80.6	53-9	47		82.2	97	164.6	110.0	1000	831.5	555
49 40	7 27.2	98	81.5	54-4	48	123.0	82.8	98	165.4	110.5	2000	1663.0	
50 41.	6 27.8	99		55.0	49	123.9	83.3	99		111.1		2494-5	
	Lat	Photo:	2	55.6	Jift		_	100000	Dep.	Lat	Dift.	Dep.	Lat
The state of	Inst	HUIR	Dep.	Lat.	Out	Dep.	Lat.	DIR	Dep.	Dat	pont.	D. D.	Lat

Dep. 103.3 03.3 04.3 04.8 05.4 105.9 106.4 107.9 108.4 109.0 109.5 111.0 111.0 111.0 111.1 111.0 1

			-			-	3 1 1		-					_
hit	Lat.	Dep.		Lat.		-	Lat.	Dep.	-	Lat.	Dep.	Dift.	Lat.	Det
1	00.8	00.6	51	41.0	30.4	101	81.1	60.2	151	121.3	90.0	201	161.4	119
2	01.6	01.2	52	41.8	31.0	02	81.9	60.8	52	122.1	90.6	02	162.2	120
3	02.4	8.10	53	42.6	31.6	03	82.7	61.4	53	122.9	91.1	03	163.0	120
4	03.2	02.4	- 54	43.4	32.2	04	83.5	62.0	54.	123.7	91.7	04	163.8	121
5	04.0	030	55	44.2	32.8	05	84.3	62.6	55	124.5	92.3	05	164.6	122
6	04.8	03.6	56	55.0	33 4	106	85:1	63.1	156	125.3	92.9	206	165.4	122
	05.6	04.2	57	45 8	34.0	07	85.9	637	57	126.1	93-5	07	166.2	125
8		04.8	58	46.6	34.6	08	86.7	64.3	58	126 9	94.1	. 08	167.0	12
9		05.4	59 60	47.4	35.1	09	87-5	64.9	59	127.7	94-7	09	167.8	124
10	08.0	06.0	-	48 2	35 7	10	88.3	65.5	60	128.5	95.3	10	168.6	12
11	08.8	06.6	61	49.0	36.3	111	89.1	66.1	161	129.3	95.9	211	169.4	125
12	09 6	07.1	62	49.8	36.9	12	89.9	66.7	62	130.1	96.5	12	170.2	126
13	10.4	07.7	63	50.6	37.5	13	90.7	67.3	63	130.9	97-1	13	171.0	126
14	11.2	08.3	64	51.4	38.1	14	91.5	67.9	64	131.7	97.7	14	171.8	127
15	12.0	08.9	65	52.2	38.7	15	92.4	68.5	65	132.5	98.3	15	172.7	128
16	12.8	09.5	66	53.0	39-3	116	93.2	69.1	166	133-3	98.9	216	173.5	128
17	13.7	10.1	67	53.8	39-9	17	94.0	69.7	67	134-1	99.5	17	174.3	129
18	14.5	10.7	68	54.6	40.5	18	94.8	70.3	68	134.9	100.1	18	175.1	129
19	15.3	11.3	69	55:4	41.1	19	95.6	70.9	69	135-7	100.7	19	175.9	130
20	16.1	11.9	70	56.2	41.7	20	96.4	71.5	70	136.5	101.3	20	176.7	131
21	16.9	12.5	71	57.0	42.3	121	97.2	72.1	171	137.3	101.9	221	177.5	131
22	17.7	13.1	72	57.8	42.9	22	98 0	72.7	72	138.1	102.5	22	178.3	132
23	18.5	13-7	73	58.6	43.5	23	98.8	73.3	73	138.9	103.1	23	179-1	132
24	19.3	14-3	74	59.4	44.1	24	99.6	73.9	74	139 7	103.7	24	179-9	133
25	20,1	14.9	75	60.2	44.7	25	100.4	74.5	75	140.5	104.3	25		134
26	20.9	15.5	76	61.0	45.3	126	101.2	75.1	176	141-3	104.9	226	181.5	134
27	21.7	16.1	77	61.8		27	102.0	75.7	77	142-1	105.4	27	182 3	135
28	22.5	16.7	78	62.6		28	102.8	76.3	78	142.9	106.0	28	183.1	135
29	23.3	17-3	79	63.4	47.1	29	103.6	76.9	79	143.7	107.6	29	183.9	137
30	24.1	17.9	80	64.2	47.7	30	104 4	77.4	80	144-5	107.2	30		-
31	24.9	18.5	81	65.0	48.3	131	105.2	78.0	181	145.4	107.8	231	185.5	137
32	25.7	19.1	82	65.8	48 9	32	106.0	78.6	82	146.2	108.4	32	187.1	138
33	26.5	19.7	83	66.7		33	106.8	79.2	83	147.0	109.0	33	187.9	139
34	27.3	20.3	84	67.5	50.0	34	107.6	79.8	84	147.8	109,6	34	188.7	
35	28.1	20.9	85	68.3	50.6	35		-	-	_		35	-	140
36	28.9	21.4	86	69.1	51.2	136	109.2	810	186	149-4	110.8	236	189.5	141
37	29.7	22.0	87	69.9		37	110.0	81.6	87	150.2	111-4	37	191.1	141
38	30.5	22,6	88	70 7	52.4	38	111.6	82.2	88 89	151.0	112.0	38	191.9	143
39	31.3	23.2	89	71.5	53.0	39	112.4	83.4	90	151.8	113 2	39 40	192.7	143
40	32.1	23.8	90	72.3	53.6	40			-				241.0	178
41	32.9	24.4	QI	73.1	54.2	141	113.2			153-4	113.0	300	The Street and Labor.	0
42	33.7	250	92	73.9	54.8		114.0	84.0	92	154.2	115.0	500	401.6	20 50 4
43	34.5	25.0	93	74.7	55-4	43	114.8	8-8	93	756.8	115.6	600	481.9	357
44	25.3	20.2		75.5	56.6	44	116.4	86.4	94	156.6	116,2	700	562.2	417
		26 8	95			45	_		95			800	642.6	476
46	36.9	27-4		77.1	57.2	146	117.2	87.0	196	157.4		900	732.9	536
47	37-7	28 0	97	77.9	57.8	47	118.0	87.0	97	158.2		1000	803 2	595
48	38.5	28.6		78.7			118.8	99 9	98	159.0	118.6	1000		1191
49	39-4	29.2	99	79.5		49	119 7	88.8	99	160.6	110.1	2000	2409.6	
50	40.2	29.8	100	80.3	59.6	150	Dep.	39.4	200	200	-3	Dift	Lien.	Lat.
- 64	Llen.	Ledt.	Diff	Dep	Jose .	וחותו	DED.	Leal.	EL ILE	LAC PO		-	The state of the s	. 22.1

				1		3 1 1	Point	s.		***	2.		1
Dift Lat.	Dep.	DiA	Lat.	Dep.	IDift		Dep.	Dift	Lat.	Dep.	Dia.	Lat.	Dep.
1 00.8	00.6	51	39.4	32.3	101	78.1	64.0	151	116.7	95.8	201	155.3	127.
2 01.5	01.3	52	40.2		02		64.7	52	117.5	96.4	02	156,1	128.1
3 02.3	0119	53	41.0	33.6	03		65.3	53	118.2	97.0	03	156.9	128.
4 03 1	02.5	54	41.7	34.2	04	80.4	66.0	54	1190	97.7	04	157.6	129.
503.9	03.2	55	42.5	34.9	05		66.6	55	119.8	98.3	05	158.4	130,
6 04.6	03.8	56	43.5	35.5	106	81.9	67.2	156	120.6	98.9	206	159.2	130
7 05.4	04.4	57	44.1	36.1	07	82.7	67.0	57	121.3	99.6	07	160,0	131.
8 06.2	05.1	58	44.8	36.8	08	83.5	68.5	58	122.1	100.2	08	160.7	131.
9 07.0	05.7	59	45.4	37.4	09	84 2	69.1	59 60	122.9	100.8	09	161.5	132.
10 07.7	06.3	60	46.0	38.0	10	85.0	69.8	60	123.6	101.5	10	162.3	-133.
11 08.5	07.0	61	47.1	38.7	111	85.8	70.4	161	124.4	102.1	211	163.1	133
11 09.3	07.6	62	47.9	39.3	12	86.6	71.0	62	125.2	102.7	12	163.8	134-
13 10.1	03.2	63	48.7	40.0	13	87.3	71.7	63	126.0	103.4	13	164.6	135
14 10.8	08.9	64	49.5		14	88.1	72 3	64	126.7	104.0	14	165.4	135
15 11.6	09.5	65	50.2	41.2	15	88.9	72.9	65	127.5	104.6	15	166 1	136.
15 11.6	10.1	66	51.0	41 9	116	89.6	73.6	166	118.3	105-3	216	166.9	137.
17 13.1	10.8	67	51.8	42.5	17	90 4	74.2	67	129.1	105.9	17	167.7	137.
18 13.9	11.4	68	52.6	43.I	18	91.2	74.8	68	129.8	106.5	18	168.5	138.
19 14 7	12.0	69	53.3	43.8	19	92.0	75.5	69	130.6	107.2	19	169.2	138.
10 15-5	12.7	70	54-1	44-4	20	92.7	76.4	70	131.4	107.8	20	170.0	139-
21 16.2	13.3	71	54.9	45.0	121	93-5	76.7	171	132.1	108.4	221	170.8	140.
22 17.0	14.0	72	55.6	45.7	22	94.3	77-4	72	132.9	109.1	22	171.6	140.
13 17.8	14.6	73	56.4	46.3	23	95.1	78.0	73	133.7	109.7	23	172.3	. 141.
44 18 5	15.2	74	57.2	46 9	24	95.8	78.6	74	134.5	110.3	24	173.1	142
25 19-3	15.9	75	58 C	47.6	25	96.6	79-3	75	135.2	111.0	25	173-9	142
26 20.1	16.5	76	58.7	48.2	126	97-4	79.9	176	136.0	111.6	226	174.6	143
17 20.9	17.1	77	59.5	48.8	27	98.1	80.5	177	136.8	112.2	27	175.4	144.
18 21.6	17.8	78	60.3	49.5	28	98.9	81.2	78	137.6	112.9	.28	176.2	144.
29 22.4	18.4	79	61.1	50.1	29	99.7	81.8	79	138.3	113.5	29	177.0	145
10 29 2	19.0	80	61.8	50.7	30	100.5	82.4	80	139.1	114.1	30	177-7	144-
31 24.0	19.7	81	62.0	51.4	131	101,2	83.1	181	139.9	114.8	231	178.5	140.
32 24.7	20 3	82	63.4	52.0	32	102.0	83.7	82	140.6	115.4	32	179.3	147.
13 25.5	20.9	83	64.1	52.6	33	102 8	84.3	83	141.4	116.0	33	180.1	147.
34 36,3	21.6	84	64 9	53-3	34	103 6	85.0	84	142.2	116.7	34	181.6	149
35 27.1	22.2	85	65.7	53.9	35	104-3	85.6	85	143.0	117.3	35		7 7 7 7 7
36 27 8	22.5	86	66.5	54.5	136	105.1	86.2	186	143.7	118.0	236	182.4 183.1	149
37 28.6	23.5	87	67.2	55.2	37	105.9	86.9	87	144.5	118.6	37 38	183.9	150.
38 29.4	24.1	88	68.0	55.8	38	106.6	87.5	88	145-3	119.1	39	184.7	151.
39 30.1	24.7	89	68.8	56 4	39	107 4	88.1	89	146.1	119.9	40	185.5	1 52.
40 30.9	25.4	90	69 6	57-1	40		-	90		-	_	7	-
41 31.7		91	70.3	57.7	141	109.0	89.4	191	147.6	121.1	30C 400	231.9	190. 2 53.
41 32.5	26.6		71.1	58.3		109.7	90.0	92	140.4		500	309.2	317.
43 33.2	27.3	93	71 9	59.3		110.5	90.7	93	149.1	123.0	600	463.8	380.
44 34 0	27.9	94	72.6	59.5	44	111.3	91.3	94	149.9	100000	700	541.1	444
45 34.8		95	734	60.2	45	112.1	92.0	95	150.7	123.7	800	618.4	507.
46 35.6	29.2	96	74.2	69	146	112.8	92.0	196	151.5	124.3	900	695.7	570.
47 36.3	29 8	97	75.0		47	113.6	93.2	97	152.2	124.9	1000	773.0	634
48 37.1	30.4	98	757	62.1	48		93.9	98	153.8	125.6	2000	1546 0	
49 37 9	200		76.5	62.8	49		P	99	154.6		300-	2319 0	1003.
38.6	31.7 Lat.	100	77-3	63.4	150	Dep.				Lat.	Dift	Dep.	Lu.
		13.4	Dep.	1	II Diff 1	I lan	1.37	1 1 Jan 19	Deb.	Louis	441014	- web.	

20.9 20.9 21.5 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 22.1 23.9 23.9 23.1 23.9 23.1

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Dift	Lat.	Dep.	Dift	Lat.	Dep:	Dift	Lat.	-	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
1	00.7	00.7	51	37.8	34.2	101	74 8	67.8	151	111.9	101.4	201	148.9	135.
2	01.5	01.3	52	38.5	34.9	02	75.6	68.5	52	112.6	102.1	02	149.6	135.
3	02.2	02.0	53	39.3	35.6	03	76.3	69.2	33	113.3	102.7	03	150.4	136.
4	03.0	02.7	54	40.0	36.3	04	77.8	70.5	54	114.1	103.4	04	151.1	137
5	03.7	_	55	-0-3		106			55	_		05	151.0	137.
- 6	04.4	04.0	56	41.5	37.6	07	78.5	71.2	156	115.6	104.7	206	152.6	138.
7	05.2	04.7	57	42.2	38 9	08	79.3	72.5	57	117.0	105.4	07	153-3	139.
9	06.7	06.0		43.7	39.6	09	80.7	73.2		117.8	106 8	09	154.1	139.
10	07.4	06.7	59	44-4	40.3	10	81.5	73-9	59 60	118.5	107 4	10	154.8	140.
11	08.2	07.4	61	45.2	41.0	III	82.2	74.5	161	119.3	108.1	-		-
13	08.0	08.1	62	45.0	41.6	12	83.0	75.2	62	120.0	108.8	12	156.3	141.
13	09.6	08.7	63	46.7	42.3	13	83.7	75.9	63	120.7	109.4	13	157.0	142.
14	10.4	09.4	64	47.4	43.0	14	84.4	76.5	64	121.5	110.1	14	158.5	343.
15	11.1	10.1	65	48.2	43.6	15	85.2	77.2	65	122.2	110.8	15	159.3	144.
16	11.0	10.7	66	48.9	44-3	116	85.9	77-9	166	123.0	111.5	216	160.0	145
17	12.6	11.4	67	49.6	45.0	17	86.7	78.6	67	123.7	112.1	17	160.7	145
18	13.3	12.1	68	50.4	45.7	18	87.4	79.2	68	124.4	112.8	18	161.5	146.
19	14.1	128	69	51.1	46.3	19	88.2	79.9	69	125.2	113.5	19	162 2	147.
20	14.8	13.4	70	51 9	47.0	20	88.9	80.6	70	125.9	114.1	20	163.0	147
-	25.6	14.1	71	52.0	47.7	121	89.6	81.2	171	126.7	114.8	221	163.7	148.
22	16.3	14.8	72	53.3	48.3	22	90.4	81.9	72	127.4	115.5	22	164.4	149.
23	17.0	15.4	73	54. I	49.0	23	91.1	82.6	73	128.2	116.2	23	165.2	149.
24	17.8	16.1	74	54.8	49.7	24	91.9	83.3	74	128.9	116.8	24	165.9	150.
35	18.5	16.8	75	55.6	50 4	25	926	83.9	75	129.6	117.5	25	166.7	151.
26	19.3	17.5	76	56.3	51.0	126	93.3	84.6	176	130.4	118.2	226	167.4	151.
27	20.0	18.1	77	57.0	51.7	27	94-1	85.3	77	131.1	118.8	27	168 2	152.
28	20.7	18.8	78	57.8	52.4	28	94.8	85.9	78	131.9	119.5	28	168.9	153.
29	21.5	19.5	79	58.5	53.0	29	95.6	86.6	79	132.6	120.2	29	169.6	153.
30	22.2	20.1	80	59.3	53.7	30	96.3	87.3	80	133.3	120.9	30	170.4	154
31	23.0	20.8	81	60.0	54-4	131	97.0	88.0	181	134-1	121.5	231	171.1	155.
32	23.7	21.5	82	60.7	55.1	32	97.8	88.6	82	134.8	122.2	32	171.9	155.
33	24.4	22.2	83	61.5	55.7	33	98.5	89.3	83	135.6	122.9	33	172.6	150.
34	25.2	23.5	85	63.0	56.4	34	99.3	90.0	84	136.3	123.5	34	173.3	157.
	26.7	-	86	-	57.1		-	-			-	35	174.1	158.
36		24.2	87	63.7	57.7	136	100.7	91.3	186	137.8	124.9	236	174.8	159.
37	27.4	25.5	88	64.4	59.1	37	101.5	92.0	87	138.5	125.0	37	175.6	159.
39	St. Committee	26,2	89	65.9	59.8	39	103.0	93.3	89	140.0	126.9	39	177.0	160.
40	29.6	26.0	90	66.7	60.4	40	103.7	94.0	90	140.7	117.6	40	177 8	161.
42	1	27.5	91	67.4		141	104.4		_	341.5	128.2	300	222.3	201.
42	200	28.2	92	140 -	61.8	11		94.7	191		128.9	400	296.4	
43	137.0	28.9	93		62.4		105.2	96.0	02	142.2	129.6		370.5	335
44	32.6	29.5	94	69.6	63.1	44	106.7	96.7	94	143-7	130.3	600	444.6	402
			95	70.4		45	107.4	97-4	95	144 4	130.9	700	518.7	470.
46	34.1	30.9	96	71.1	64.5		108.2	98.0	196	145.2	131.6	800	592.8	537-
47	134.8	31.6	97	71.0	65.1	47	108.9	98.7	97	145.9	132.3	900	666.9	604
48	35.6	32.2		72.6	65.8	48	109.6	99.4	98	146.7			741.0	672.
49	36.3		99	73-3	66.5	49	110.4	100.0	99	147.4		2000	1482 0	1344
50	37.0		100	74-1	67.1	150	111.1	100.7	200		134.3	300C		
Diff	Dep.	Lat.	Dift	Dep.	Lat.	Dift	Dep.	Lat.	Dia	Dep.	Lat.	Dift	Dep.	Lat.

19								4 P	oints.						
A La		Dep.	(D	iAII	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Duft.	Lat.	Dep.
1 00.	-	00.7			36.1	26.1	101	71.4	71.4	151	106.8	106.8	201	142.1	142.9
100		01,4		52	36.8	36.8	02	72.1	72.1	52	107.5	107.5	02	142.8	142.8
102	.1	02.1		53	37.5	37.5	03	72.8	72.8	53	108.2	108.2	04	143.5	143-5
403		02.8			38.2	38.2	04	73.5	73.5	54	109.6	109.6	05	144.2	144-9
5 03	- 1	03.	4		38.9		106	74.2	74.2	156	110.3	110.3	206	145.7	145-7
604		04.1			39.6	39.6	07	74.9	74.9	57	111.0	111.0	97	146.4	146.4
804		04.9			41.0	41.0	08	75.7 76.4	76.4	58	111.7	111.7	08	147.1	1474
9 06	4	06,	1	59	41.7	41.7	- 09	77.1	77.1	59	112.4	112.4	09	147.8	1478
80 07		07,	1	60	42.4	42.4	10	77.8	77.8	60	113.1	113.1	10.	148.5	148.5
11/07	.8	07	8	61	45.1	43.1	111	78.5	78.5	161	113.8	113 8	211	149.2	149-2
11 Og		08,	-	62	43.8	43.8	12	79.2	79.2	63	114.5	114.5	12	149.9	149.9
11 00		09.			44.5	44.5	14	79.9	80.6	64	116.0	1116.0	14	151.3	151.3
16 10	3.6	10.		65	46.0	46.0	15	81.3	81.3	65	116.7	116.7	15	152.0	152.0
16 1		11.	-	66	46.7	46.7	116	82.0	82.0	166	117.4	117.4	216	152.7	152-7
	1,0	12,		67	47.4	47.4	17	82.7	82.7	67	118.1	118.1	17	153.4	253-4
	1.7	12.	7	68	48.1	48.1	14	83.4	83.4	68	118.8	118.8		154-1	154-1
	3-4	13	~ ~		48.8		19	84.1	84.1	70	119.5	11/20	20	154.8	154.8
March 1	4.1	14	-	70	49.5	49.5	121	84.6	85.6	171	120.9	120 0	221	156.3	1.66.2
	4.8 5.6	14		74	50.9		22	86.3		72	121.6		22	157.0	156.3
04 2	6.3	16	3	73	51.6	51.6	23	87.0	87.0	73	122.3		23	157.7	157.7
	7.0	17		74	52.3	52.3	24	87.7	87.7	74	123.0	123.0	24	158.4	158.4
145	7.7	17	7.	75	53.0		25	88-4		75	_	-	25	159.1	
26 1	18-4	18		76	33.7	53 7	126	8g.1	89.1	176	1 2 2 2 2 2		226	159.8	1592
111111111	19.1	19		77	54-4	54-4	27	89.8		77	125.2	Charles Co.	27	161.2	1615
mac at	19.8	19		79	55.1	55.2		90.5				126.6	29	161.9	161.9
	21 2			80	55.9	55.9 56.6	30			80	127.3	127.3	30	162.6	162.6
	21.9		-	281	57.3	57.3	131	-		181				163.3	163-3
	22.6			84	58.0	58.0	32	93.3	93.3					164.0	164.6
33	28.			83	58.		33			и о		A 2 CO	1	164.7	164.7
34 35	24-1		.0	84	60.		34	94.7		11 0				166.2	1662
	4 25			86		-							11.6	166,9	1664
37	26.		5	87			3	06.		1 8	122.		1 37	167.6	1672
34	26.	0.50	.0	88	62:		3	97.	97.	81	132.	9 132.9	38	168.3	168
39	27.		.6	89		9 62.9	39	98.	98.				11	169.0	169
18	28.		3.3	90				99.	99.0	1	7 2 2 2 2 2				169.
	39		9.0	9	64.	3 64.			7 99.				300	212.1	
43	30	7 2	9.7	92	05.	1 65. 8 65.	4		1 101.		135. 3 136.	8 135.1 5 136.	500		
117	1131	113	1.1	3	4 66.	5 66.	5 4	101.	8 101.	9		2 137		424.1	424
1	31		1.8	9	5 67.	2 67.	2 4	5 102.	5 102.	5 9	5 137	2 137.	9 700	495.0	495
4	6 32	.5 3	2.5		6 67	9 67.	9 14	6 103.	2 103.	2 19	6 138	6 138	6 8c	565.	565
4	1 33	3 3	3.2	9	7 68	6 68	~ · T	/ 1203	9 103.	9 9	7 139	.3 139.	3 90		636. 1 707. 2 1414.
	0144		3.9	9	8 69		3 4		6 104.	9	8 140				2 1414
	0 1	.6	4.6	10	9 70			9 105			9 140				3 2121
D	it D	44 1	21	n	-	p. Lat		ft Der		- 11	ift Dep	-			
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1								4	Poin	is.	-	- where	A. A	X	-

							1 D	legre	e.		1			
Dift	Lat.	Dep.	-		Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	De
1	01.0	00.0	51	51.0	00.9	101	101.0	01.8	151	151.0	02.6	201	201.0	-
2	02.0	1.30	52	52.0	00.9	02	102.0	01.8	52	152.0	02.6	02		
. 3		00.1	53			03	103.0	8.10	53	153.0	02.6	03		
4	0.7	00.1	54	54.0	00.9	04	104.0	01.8	54	154.0	02.7	04		0
- 6	050	00.1	55		01.0	05	105.0	01.8	55	155.0	02.7	05		
	06.0	00.1	56	56.0	01.0	106	106.0	01.8	156	156.0	01.7	206		
7	07.0	00.1	57	57.0	01.0	07	107.0	01.9	57	157.0	02.7	07	207.0	
8	08.0	00.1	58	58.0		08	108.0	01.9	58	158.0		08	208.0	01
9	100	00.2	59		01.0	09	109.0	01.9	59	159.0	02.7	09	209.0	02
10	10.0	00 2	60	60.0	01.1	10	110.0	019	60	160.0	02.8	10		01
11	11.0	00.2	61	61.0	01.1	111	111.0	01.9	161	161.0	02.8	211		-
12	12.0	00,2	62			12	112,0	01.9	62	162.0	02.8	12	100	
13	13.0		63		01.1	13	113.0	02.0	63	163.0		13		01
14		00.2	64			14	114.0	02.0	64	164.0	02.8	14	214.0	01
25	15.0	00.3	65			15	115.0	02.0	65	165.0	02.9	15		
16	16.0	00.3	66			116	116.0	02.0	166	166.0	02.9	216	216.0	100
17		00.3	67	67.0	01.2	17	117.0	02.0	67	167.0	02.9	. 17	217.0	
18		00.3	68	68.0	01.2	18	118.0	02.1	68	168.0	02.0	18	218.0	02
19	19.0		69	69.0	100000	19	119.0	02.1	69	169.0	02.9	19	219.0	
20	20.0	00.4	70	700	01.2	20	120.0	02.1	70	170.0	02.0	20	220.0	
21	21.0	00.4	71	71.0	01,2	121	121.0	02.1	171	171.0	03.0	221	221.0	-
22	22.0	00,4	72		01.3	22	122.0	W	72		03.0	22	222.0	
23	23.0	00,4	73	73.0		23	123 0	02.1	73	173.0	C	23	223.0	
24		00.4	74	74.0	01.3	24	124.C	02.2	74		03.0	24	224.0	
25	25.0	00.4	75	75.0	01.3	25	125.0	02.2	75	175.0	03,0	25		
26	26.0	00.5	76	76.0	01.3	126	126.0	02.2	176	176.0	03.0	226	226.0	
37	27.0	00.5	77		01.3	27	127.0	ME WELL 93 1	77	177.0	03.1	27	227.0	
28	28.0	00,5	78	78.0	01.4	28	128.0	100 3773	78	178.0	03.1	28	228.0	
29	29.0	00.5	79		01.4	29	129 0	02.2	79	179.0	03.1	29	229.0	
30	30.0	00.5	80	80.0	01.4	30	130 0	02.3	80	180.0	03.1	30	230.0	-
31	31.0	00.5	81	81.0	01.4	131	131.0	_	181	181.0	03.1	231	231.0	-
32		00.6	82	82.0	01.4	32	132.0		82	182.0	03.1	32	232.0	
33		00.6	83	82.0	01.5	33	133.0		83	183.0		33	233.0	
34	34.0		84	84.0	01.5	34	134.0	Official Co.	84		03.2	34	234.0	
35	3 0.0	00.6	84	85.0	01.5	35	1350	20.00 (20.0	85	185.0	03.2	35	235.0	04.
36	36.0	00.6	86		01.5	136	136.0	_	186	186.0	03.2	236	236.0	
37	37.0	00.6	87	87.0	01.5	37	137.0	11. 2.19.6	87	187.0	03.2	37	237.0	04.
38		00.7	88	88.0	01.5	38	138.0	02.4	88	128.0	03.2	38	238.0	
39	39.0	00.7	89	89.0	01.6	39	139.0	COLUMN TO A SEC.	89	189.0	03.3	39	239.0	
40	40 0	00.7	90	90.0	01.6	40	. M. P.	02.4	90	190.0	03.3	40	240.0	
41	41.0	00.7	91	91.0	01.6	141	141.0	-	191	191.0	03.3	300	299.9	05.
	42.0		92		01.6		142.0		92	192.0		400	399-9	
	43.0		93	93.0	01.6	43	143 0			193.0		500	499-9	08.
44	44.0	00.8	94		01.6	44	144.0		94	194.0		600	599.9	10.
45	45.0		95	95.0	01.7	45	145.0		95	195.0		700	699.9	12.
	46.0		96	96.0	01.7	146	-	_	196	196.0		800	799.9	14.0
	47.0		97	97.0		47	147.0			190.0		900	899.9	15.
	48.0		98	98.0	01.7	48	148.0		97	198.0		1000	999.8	17-
	49.0	D	99	99.0	01.7	49	144.0		99	199.0		2000	1999.6	34
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-	01.0	00.0	51	51.0		101	100 9	03.5	151	150.9	05.3	201	200.9	
1	02.0	1.00	52			02	101.9	03.6	52	151.9	05.3	02	201.9	07.0
1	03.0	00.1	53	53.0	01.8	03	102.9	03.6	53	152.9	05.4	03	202.9	07.1
4	04.0	00.1	54		01.9	04	103.9	03.6	54	153.9	05.4	04	203.9	07.1
5	05.0	00 2	55	55.0	01.9	05	104.9	03.7	55	154.9	05.4	05	204.9	07.2
-6	06.0	00.2	56	56.0	02.0	106	105.0	03.7	156	155.9	05.5	206	205.9	
7	07.0	00.2	57	57.0	02.0	07	106.9	03.7	57	156.9	05.5	07	206.9	07.2
8	08.c	00.3	58	58.0	02.0	08	107.9		58	157.9	05.5	08	207.9	07.2
9	09.0	00.3	59	59 0	02.1	09	108.9	103.8	59	158.9	05.6	09	208.9	07.3
10	10.0	00.4	60	60 0	02.1	10	109.9	03.9	60	159.9	05.6	10	209.9	07.4
11	11.0	00.4	61	61.0	02.1	111	110.9	03.9	161	160.9	05.6	211	210.9	
11	12 0	00.4	62			12	111.9	03.9	62	161.9	05.7	12	211.9	07.4
13	13.0	00.5	63	63.0	02.2	13	112.9	04.0	63	162.9	05.7	13	212.9	07.4
14	14.0	00.5	64	64.0	02.2	14	113.9	04.0	64	163.9	05.7	14	213.9	07.5
15	15.0	00.5	65	650	02.3	15	114.9	04.0	65	164.9	05.8	15	214.9	07.5
16	16.0	00.6	66	66.0	02.3	116	115.9	04.1	166	165.9	05.8	216	215.9	
17	17.0	00.6	67	67.0	02.3	17	116.9	04.1	67	166.9	05.8	17	216.9	07.6
18	18.0	00.6	68	68.0	02.4	18	117.9	04.1	68	167.9	05.9	18	217.9	07.6
19	19.0	00.7	69	69.0	02.4	19	118.9	04.2	69	168.9	05.9	19	218.9	07.6
10	20.0	00.7	70	70.0	02.4	20	119.9	04.2	70	169.9	06.0	20	219.9	07.7
21	21,0	00.7	71	71.0	02.5	121	120.9	04.2	171	170.9	06.0	_	_	07.7
22	22.0	00.8	72	72.0	02.5	22	121.9	04.3	72	171.9	06.0	221	220.9	07.7
23	13.0	00 8	73	73.0	02.5	23	122.9	04.3	73	172.9	06.1	22	221.9	07.8
4	24.0	00.8	74	74.0	02.6	24	123.9	04.3	74	173.9	06.1	23	223.9	07.8
	25.0	00.9	75	75.0	02.6	25	124.9	04.4	75	174.9	06.1	25	224.9	07.8
25 26	26.0	2.00	76	76.0	02.7	126	125.0	04.4	176	-	06.2	_		07.9
37	27.0	00.9	77	77.0	02.7	27	126.9	04.4		175.9	06.2	226	225.9	07.9
28	28.0	01.0	78	78.0	02.7	28	127 9	04.5	77	177.9	06.2	28	226,9	07.9
19	29.0	0.10	79	79.0	02.8	29	128.9	04.5	79	178.9	06.3	29	227.9	08.0
30	30.0	01.1	80	80.0	02.8	30	129.9	04.6	80	179.9	06.3	30	229.9	08.0
31	310	01.1	81	81.0	02.8	131	130.9	04.6	181	180.9	06.3			08.1
32		01.1	82	81.9	02.9	32	131.9	04.6	82	181.9	06.4	231	230.9	08.1
1000	33.0	01.2	83	82.9	02.9	33	132.9	04.7	83	182.9	06.4	32	231.9	08.1
34	34.0	01.2	84	83.9	02.9	34	133.9	04.7	84	183.9	06.4	33	232.9	08.2
35	35.0	01.2	85	84.9	03.0	35	134.9	04.7	85	184.9	06.5	34	233.9	08.2
36	36.0	01.3	86	85.0	03.0	136	135.9	04.8	186		06.5	35	234-9	08 2
37	37.0	01.3	87	86.9	03.0		136.9	04.8	87	185.9	06.5	236	235.9	08.3
38	38.0	01.3	88	87.9	03.1	37	137.9	04.8	88	186.9	06.6	37	236.9	08.3
39	39.0	01.4	89	88.9	03.1	39	138.9	04.9	89	188.9	06.6	38	237.9	08.3
	40.0	01.4	90	89.0	03.1	40	139.9	04.9	90	189.9	06.7	39	238.9	08.4
40	41.0	01.4	-	-		-			-			40	239.9	08.4
42	42.0	0.	91	90.9	03.2	141	140.9	04.9	191	190.9	06.7	300	299.8	10.5
41	42.0	01.5	1 92	91.9	03.2	42	141.9		92	191.9	00.7		399-5	
44	44.0	01.5	93	93.9	03.2		142.9	05.0	1 22	192.9	8,00	500	499 4	17.6
45	45 0	01.6	40.00	94.9	Control of the	44		05.1	94	193.9	06.8	600	599.6	20.9
46	46.0	2.6				45	144.9		95	194.9	-	700	699.6	24.4
47	47-0	01.6	90	95.9	03-4	146	145.9	05.1	196	195.9	06.9	800	799-5	27.9
48	48.0	01.7		96.9		47	146.9	05.1	97	196.9		900	899 4	31.4
	49.0	01.7	90	97.9	92.5	48	147.9	05.2			06.9	1000	999 4	34.9
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	00.5 00.6 00.6 00.7 00.8 00.8 00.9 01.0 01.1 01.1 01.2 01.3 01.3	59 60 61 62 63 64 65 66 67 70 71 73 74 75	58.9 59.9 60.9 62.9 63.9 64.9 65.9 66.9 67.9 68.9 70.9 71.9 72.9 73.9	03.1 03.2 03.2 03.2 03.3 03.4 03.5 03.5 03.6 03.6 03.7 03.8 03.8	09 10 111 12 13 14 15 116 17 18 19 20 121 22 23 24	108.8 109.8 110.8 111.8 112.8 113.8 114.8 115.8 116.8 117.8 119.8 120.8 121.8	05.7 05.8 05.9 05.9 06.0 06.1 06.1 06.2 06.3 06.4	59 60 161 62 63 64 65 166 67 68 69 70 171 72	158.8 159.8 160.8 161.8 162.8 163.8 164.8 165.8 166.8 168.8 170.8 170.8	08.3 08.4 08.5 08.5 08.6 08.6 09.7 09.7 09.8 09.9 09.0	09 10 211 12 13 14 15 216 17 18 19 20 221	208.7 209.7 210.7 211.7 212.7 213.7 214.7 216.7 217.7 218.7 219.7	10 11 11 11 11 11 11 11 11 11 11
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.000	01.1 01.1 01.2 01.3 01.3	71 72 73 74 75	70.9 71.9 72.9 73.9	03.7 03.7 03.8 03.8 03.9	121 22 23 24	120.8 121.8 122.8	06.3 06.4 06.4	171	169.8 170.8 171.8	09.0	221	219.7	11.
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.0	01.3	75		03.9	3.6	127.8	106 -		172.8	09.1	23	222:7	11.
.00	014		74-9	03.9			00.5	74	173.8	09.1	24	213.7	11.
		76		-	35	124.8	06.5	75	174.8	09.2		224.7	11.
.010			75.9	04.0	126	125.8	06.6	176	.75.8	09.2		225.7	11.
	01.4	77	76.9	04.0	27	126.8	06.6	72	176.8			226.7	71.
	01.5	78	77.9	04.1	28	127.8	06.7	78	177.8			227.7	11.
	01.6	80	78.9	04.1	29	128.8	06.8	79	178.7		29	228.7	12.0
	01.6	-	79.9	04.2	30	129.8	06.8	80	179.7	09-A	30	229.7	12.
	1.6	81	80.9	04.2	131	130.8	06.9	181	180.7	09.5	231	13017	12.
	01.7	82	81.9	04.3	32	131.8	06.9	82	181.7		32	23167	72.
	01.8	84	83.9	04.3	33	132.8	07.0	83	182.7		33	232.7	12.
1000	01.8	85	84.9	04.4	34	133.8	07.0	85	183.7	09,6	34	233.7	12.
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	1.0	14.				135.8		100.00	786				12.4
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71						141.8	07.4	1000			400		20.9
		93	92.9			144.8	07.5	93	192.7	10:1	500	499-3	26.3
.90	2.3			04.9	44	141.8	07.5	94	COLUMN TO SERVICE STATE OF THE PERSON OF THE	10.1		599.2	31.4
.90	2.4	95	94.9	05.0	45	144.8	07.6	95	194.7	10.1	700		36.6
_	2.4	96	95.9	05.0		145.8		196	195.7	10.3	800	798.9	41.9
		97	96 9	05.1	47	146 8	07.7	97	196.7	10.3	900	898.8	47-
9 0	2.5	98	97.9	05.1	48	147.8	07.7	98	197-7	10.4	1000	998.6	52.3
21				05.2	49	148.8	07.8	99	198.7	10.4		1997-2	104 6
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	99999999999999	9 01.9 9 02.0 9 02.0 9 02.0 9 02.1 9 02.1 9 02.2 9 02.2 9 02.4 9 02.4 9 02.5 9 02.6 9 02.6	.9 01.9 86 .9 01.9 87 .9 02.0 89 .0 02.1 90 .9 02.2 92 .9 02.2 93 .9 02.4 95 .9 02.4 95 .9 02.5 98 .9 02.6 99 .9 02.6 99 .9 02.6 99	.9 01.9 86 85.9 9 01 9 87 86.9 9 02.0 89 88.9 9 02.1 90 89.9 9 02.2 92 91.9 9 02.2 93 92.9 9 02.3 94 93 9 9 02.4 95 94.9 9 02.5 97 96 9 9 02.5 98 97.9 9 02.6 99 98.9 9 02.6 100 99.9	.9 01.9 86 85.9 04.5 .9 01 9 87 86.9 04.6 .9 02.0 88 87.9 04.6 .9 02.1 90 89.9 04.7 .9 02.1 91 90.9 04.8 .9 02.2 92 91.9 04.8 .9 02.2 93 92.9 04.9 .9 02.4 95 94.9 05.0 .9 02.4 96 95.9 05.0 .9 02.5 97 96 9 05.1 .9 02.6 99 98.9 05.2	9 01.9 86 85.9 04.5 136 9 01.9 87 86.9 04.6 37 9 02.0 88 87.9 04.6 38 9 02.0 89 88.9 04.7 39 0 02.1 91 90.9 04.8 741 9 02.2 92 91.9 04.8 42 9 02.2 93 92.9 04.9 43 9 02.3 94 93 9 04.9 44 9 02.4 95 94.9 05.0 45 9 02.5 97 96 9 05.1 47 9 02.5 98 97.9 05.1 48 9 02.6 99 98.9 05.2 49 9 02.6 99 98.9 05.2 49 0 02.6 100 99.9 05.2 49 0 02.6 100 99.9 05.2 150 0 Lat. Dift Dep. Lat. Dift	9 01.9 86 85.9 04.5 136 135.8 9 01.9 87 86.9 04.6 37 136.8 137.8 9 02.0 89 88.9 04.7 39 138.8 9 02.1 90 89.9 04.7 40 139.8 9 02.1 91 90.9 04.8 141 140.8 9 02.2 92 91.9 04.8 42 141.8 9 02.2 93 92.9 04.9 44 143.8 9 02.4 95 94.9 05.0 45 144.8 9 02.4 95 94.9 05.0 45 144.8 9 02.5 97 96 9 05.1 46 145.8 9 02.5 97 96 9 05.1 46 145.8 9 02.5 98 97.9 05.1 48 147.8 9 02.6 99 98.9 05.2 150 149.8 147.8 9 02.6 100 99.9 05.2 150 149.8 02.6 100 99.9 05.2 150 149.8	9 01.9 86 85.9 04.5 136 135.8 07.1 9 01.9 87 86.9 04.6 37 136.8 07.2 9 02.0 89 88.9 04.7 39 138.8 07.3 9 02.1 90 89.9 04.7 40 139.8 07.3 9 02.1 91 90.9 04.8 141 140.8 07.4 9 02.2 92 91.9 04.8 42 141.8 07.4 9.9 02.2 93 92.9 04.9 43 142.8 07.5 9 02.3 94 93 9 04.9 44 143.8 07.5 9 02.4 95 94.9 05.0 45 144.8 07.6 9 02.5 97 96 9 05.1 48 147.8 07.6 9 02.5 98 97.9 05.1 48 147.8 07.6 9 02.5 98 97.9 05.1 48 147.8 07.7 9 02.5 98 97.9 05.1 48 147.8 07.7 9 02.6 99 98.9 05.2 150 149.8 07.8 124.8 07.6 100 99.9 05.2 150 149.8 07.9 124.8 07.6 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.7 124.8 07.8 124.8 07.8 124.8 07.8 124.8 07.8 124.8 07.8 124.8 07.8 124.8 07.8 124.8 07.9 124.8 0	9 01.9 86 85.9 04.5 136 135.8 07.1 186 9 01 9 87 86.9 04.6 37 136.8 07.2 87 9 02.0 89 88.9 04.7 39 138.8 07.3 89 9 02.0 9 89.9 04.7 40 139.8 07.3 90 9 02.1 91 90.9 04.8 42 141.8 07.4 191 9 02.2 92 91.9 04.8 42 141.8 07.4 92 9 02.2 93 92.9 04.9 43 142.8 07.5 93 9 02.3 94 93 9 04.9 44 143.8 07.5 94 9 02.4 95 94.9 05.0 45 144.8 07.6 95 9 02.4 96 95.9 05.0 46 145.8 07.6 95 9 02.5 97 96 9 05.1 48 147.8 07.7 98 9 02.6 99 98.9 05.2 150 149.8 07.9 99 9 02.6 99 98.9 05.2 150 149.8 07.9 99 14 02.6 100 99.9 05.2 150 149.8 07.9 99 150 Lat. 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Dift	9 01.9 86 85.9 04.5 136 135.8 07.1 186 185.7 86.9 01.9 87 86.9 04.6 37 136.8 07.2 87 186.7 9 02.0 89 88.9 04.7 39 138.8 07.3 89 188.7 9 02.1 90 89.9 04.7 40 139.8 07.3 90 189.7 90 02.1 91 90.9 04.8 141 140.8 07.4 191 190.7 90 02.2 92 91.9 04.8 42 141.8 07.4 92 191.7 90 02.2 93 92.9 04.9 43 142.8 07.5 93 192.7 90 02.4 95 94.9 04.9 44 143.8 07.5 94 193.7 90 02.4 95 94.9 05.0 45 144.8 07.6 95 194.7 90 02.4 96 95.9 05.0 45 144.8 07.6 95 194.7 90 02.5 97 96 9 05.1 47 146 8 07.7 97 196.7 97 02.5 97 96 9 05.1 48 147.8 07.7 98 197.7 98 02.6 99 98.9 05.2 49 148.8 07.8 99 198.7 199.0 02.6 99 98.9 05.2 150 149.8 07.9 97 196.7 98 02.6 100 99.9 05.2 150 149.8 07.9 97 199.7 199	9 01.9 86 85.9 04.5 136 135.8 07.1 186 185.7 09.7 87 86.9 04.6 37 136.8 07.2 87 186.7 09.8 9 02.0 89 88.9 04.7 39 138.8 07.2 88 187.7 09.8 9 02.1 90 89.9 04.7 40 139.8 07.3 90 189.7 09.9 9.9 02.1 91 90.9 04.8 141 140.8 07.4 191 190.7 10.0 190.2 92 91.9 04.8 42 141.8 07.4 92 191.7 10.0 190.2 93 92.9 04.9 43 142.8 07.5 93 192.7 10.1 190.2 190	.9 01.9 86 85.9 04.5 136 135.8 07.1 186 185.7 09.7 236 .9 01.9 87 86.9 04.6 37 136.8 07.2 87 186.7 09.8 37 .9 02.0 88 87.9 04.6 38 137.8 07.2 88 187.7 09.8 38 .9 02.0 89 88.9 04.7 39 138.8 07.3 89 188.7 09.9 39 .0 02.1 90 89.9 04.7 40 139.8 07.3 90 189.7 09.9 40 .9 02.1 91 90.9 04.8 141 140.8 07.4 191 190.7 10.0 300 .9 02.2 92 91.9 04.8 42 141.8 07.4 92 191.7 10.0 300 .9 02.2 93 92.9 04.9 43 142.8 07.5 93 192.7 10.1 500 .9 02.3 94 93 9 04.9 44 143.8 07.5 94 193.7 10.1 600 .9 02.4 95 94.9 05.0 45 144.8 07.6 95 194.7 10.2 700 .9 02.4 96 95.9 05.0 146 145.8 07.6 95 194.7 10.2 700 .9 02.5 97 96 9 05.1 48 147.8 07.7 98 197.7 10.4 1000 .9 02.6 99 98.9 05.2 49 148.8 07.8 99 198.7 10.4 1000 .9 02.6 99 98.9 05.2 49 148.8 07.8 99 198.7 10.4 1000 .9 02.6 100 99.9 05.2 150 149.8 07.9 200 199.7 10.5 3000	9 01.9 86 85.9 04.5 136 135.8 07.1 186 185.7 09.7 236 235.7 9.9 01.9 87 86.9 04.6 37 136.8 07.2 87 186.7 09.8 37 236.7 9.0 02.0 89 88.9 04.7 39 138.8 07.2 88 187.7 09.8 38 237.7 09.0 02.1 90 89.9 04.7 40 139.8 07.3 90 189.7 09.9 40 239.7 09.0 02.1 91 90.9 04.8 42 141.8 07.4 92 191.7 10.0 300 299 6 09.0 02.2 92 91.9 04.8 42 141.8 07.4 92 191.7 10.0 400 399.4 141.8 07.5 93 192.7 10.1 500 499.3 00.2 199.0 02.2 93 92.9 04.9 43 142.8 07.5 93 192.7 10.1 500 499.3 00.4 95 94.9 44 143.8 07.5 94 193.7 10.1 600 599.2 00.4 95 94.9 05.0 45 144.8 07.6 95 194.7 10.2 700 699.0 02.4 95 94.9 05.0 45 144.8 07.6 95 194.7 10.2 700 699.0 02.4 96 95.9 05.0 45 144.8 07.6 95 194.7 10.2 700 699.0 02.5 97.96 9 05.1 47 146 8 07.7 97 196.7 10.3 900 898.8 99.2 02.6 99 98.9 05.2 49 148.8 07.8 99 198.7 10.4 1000 998.6 100 99.9 05.2 49 148.8 07.8 99 198.7 10.4 1000 998.6 100 99.9 05.2 150 149.8 07.9 98 197.7 10.4 1000 998.6 100 99.9 05.2 150 149.8 07.8 99 198.7 10.4 200b 1997.2 10.6 100 99.9 05.2 150 149.8 07.8 99 198.7 10.4 200b 1997.2 10.6 100 1997.2 1

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				-			4 Deg	rees.				-		
Diff	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dia	Lat.	Dep.	Dift.	Lat.	De
		1.00	51	50.9	03.6	101	100.8	07.0	151	150.6	10.5	201	200.5	14
2	0.40	00.1	52	51.9	03.6	02	101.8	07.1	52	151.6	ac.6	02	201.5	14
	03.0	00.2	53	52.9	03.7	03	102.8	07.2	53	152.6	10.7	03	202.5	14
4	04.0	00.3	54	53.9	03.8	04	103.8	07.2	. 54	153.6	10.7	04	203.5	14
3	05.0	00.3	55	54.9	03.8	05	104.7	07.3	55	154.6	10.8	05	204.5	14
-6	06.0	00.4	56	55.9	03.9	106	105.7	07.4	156	155 6	10.9	206	205.5	14
9	07.0	00.5	57	56.9	04.0	07	106.7	07.5	57	156.6	10.9	.07	206.5	34
8	08.0	co.6	58	57.9	04.0	08	107.7	07.5	58	157.6	11.0	.08	207.5	14
9	09.0	00.6	59	58.9	04.1	09	108.7	07.6	59 60	1 58.6	11.1	09	208-5	14
10	10.0	00.7		59.9	04.2	10	109.7	07.7		159.6	11.2	10	209.5	14
11	11.0	8,00	61	80.9	04.3	III	110.7	07.7	161	160.6	11.2	211	210.5	14
12	13.0	00.8	62	61.9	04.3	13	111,7	07.8	62	161.6	11.3	12	211.5	24
13	13.0	00.9	63	62.8	04.4	13	112.7	07.9	63	162.6	11.4	13	212.5	14
14	14.0	01.0	64	63.8	04.5	14	113.7	07.9	64	163.6		14	213.5	14
15	15.0	01.0	65	64.8	04.5	15	114.7	08.0	65	164.6	11.5	115	214.5	15
16	16.0	01.1	66	65.8	04.6	116	115.7	08.1	166	165.6	11.6	216	215.5	115
17	17.0	01.2	67	66.8	04.7	17	116.7	08.2	67	166.6	11.6	17	216.5	25
18	18.0	01.3	68	67.8		18	117.7	08.8	68	167.6	31.7	18	217.5	15
19		01.3	69	68.8	04.8		118.7	08.3	69	168.6	11-8	19	218.5	35
20	20.0	01.4	70	69.8	04.9	20	119.7	08.4	70	169.6	1 1.8·	20	219.5	115
11	20.9	oris	71	70.8	05.0		120.7	08.4	173	170.6	11.9	221	220.5	25
21		01.5	72	71.8	05.0		121.7	08.5	72	171.6	12-0	22	221.5	25
23		01.6	73	72.8	05.1		122.7	08.6	73	172.6	12.1	23	222.5	15
24		01.7	74	73.8	05.2		123.7	08.6	74	173.6	12.1	24	223-5	25
25	14.9	01.7	75	74.8	05.2	35	124.7	08.7	75	174.6	12.2	25	224.5	15
20	25.9	01.8	76	75.8	05.3	126	125.7	08.8	176	175.6	12.3	226	225.5	35
27	16.9	orig	77	76.8	05.4	27	126.7	08.9	77	176.6	12.3	27	226.5	15
	17.9	02.0	78	77.8	05.4		127.7	08.9	78	177.6	12,4	28	227.5	15
29		02.0	79	78.8	05.5	29	128.7	09.0	79	178.6	12.5	129	228-5	16
20	199	02.1	80	79.8	05.6	30	129.7	09.1	80	179 6	12.5	30	229-4	16
131	30.9	02.2	81	80,8	05.7	131	130.7	09.1	181	180.6	12.6	231	2304	16
32	31.9	02.2	82	81.8	05.7	34	131.7	0912	82	181.6	12 7	32	2314	16
	32.9	02.3	83	82.8	05.8	33	132.7	09.3	83	182.6	12.8	33	232-4	26
34	33.9		84	83.8	05.9		133.7	09.3	84	183.6	12.8	34	2334	16
15	14.9	02.4	85	84.8	05.9		134-7	09.4	45	184.6	12.9	135	234-4	16
15	35.9	02.5	86	85.8	06.0	136	13517	09.5	186	185.6	13.0	136	235-4	76
37	36.9	02.6	87	86.8	06.1	37	136.7	09.5	87	186,6	13.0	37	236.4	16
38		02.7	88	87.8	06.1	37	137.7	09.6	88	187.5	13.1	38	237-4	146
39			89	88.8	06.2	39	138.7	09.7	89	188.5	13.2	39	238.4	136
40	39.9	02.8	90	89.8	06.3	40	139-7	09.8	90	189.5	13.2	40	239.4	416
#1	40.9		91	90 8	06.4	141	140.7	09:8	191	190.5	13.3	300	299 3	20
42	41.9	02.9	92	91.8	06.4	42	141.7	09.9	92	191.5	13.4	400	399.4	- 27
43	42.9	103.0		92.8	06.5	43	142.7	10:0	93	192.5	13.5		498.8	34
14	43.9	03.1	94	93.8	06.6	44	143.7	10.0		193.5	13.5	600	598.5 698.3	4.1
45	45.9	03.1	95	94.8	06.6	45	144.7	10,1	95	104-5	13.6	700	698.3	48
46	45.9	03 2	96	95.8	06.7	146	1456	10.2	196	195.5	13.7	800	798.0	55
47	40.9	02 2	97	96.8	06.8	47	146.6	10.2	97	196.5	13.7	900	897 8	62
42	47.9	03.4	98	97.8	06.8	48	147.6	10.3	98	197.5	13.8	1000	997.6	69
45	48.9	03.4		48.8	06.9	49	148.6	10.4	99	198.5	13 9	2000	1995.2	139
50	49.9	03 4	100	99.8	07.0	150	149.6	10.5	200	199-5	13.9	3000	2992.8	209
Dif	Dep.	Lit	Dia		Lat.	Dift		Lat.	Dift	Dep.	Lat	Dift.	Dep.	14

			-			-5	Deg	rees.						
Dut	Lat.	D-p.	Dift	Lat.	Den.	Dist	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
-1	01.0	00.1	51	50.8	04.4	101	100.6	08.8	151	150.4	13.1	201	200.2	17.0
2	03.0	00.2	52	51.8	04.5	02	101.6	08.9	52	151.4	13.2	02	201.2	17.6
3	03.0	00.3	53	52.8	04.6	03	102.6	09.0	53	152.4	13.3	03	202.2	17.7
4	04.0	00.3	54	53.8	04.7	04	103.6	09.0	54	153.4	13.4	04	203.2	17.7
5	05.0	00.4	55	54.8	04.8	05	104.6	09.1	55	154.4	13.5	05	204.2	17.8
1.6	06.0	00.5	56.	55 8	04.9	106	105.6	09.2	156	155-4	13.6	206	205.2	17.0
7	10000	03.6	57	56.8	05.0	07	106.6	09.3	57	156.4	13.7	07	206.2	18.0
8			58.	57.8	05.1	08	107.6	09.4	58	157.4	13.7	08	207.2	18.1
9	090	00.8	59	58.8	05.1	09	108.6	09.5	59	158.4		09	208,2	18.2
10	10.0	00.9	60	59.8	05.2	10	109.6	00.6	60	159.4	13.9	IC	209.2	18.
1)	11.0	010	61	60.8	05-3	111	110.6	09.7	161	160.4	14.0	211	210,2	18.4
12		01.0	62	61.8	05.4	12	111.6	C9.7	62	161.4	14.1	12	211.2	18.4
13	12.9	01.1	63	62.8	05.5	13	112.6	09.8	63	162.4	14.2	13	212,2	18.
14	13.9	01.2	64	63.8	05.6	14	113.6	09.9	64	163.4	14-3	14	213.2	18.6
1	14.9	01.3	65	64.8	05.7	15	114.6	10.0	65	164.4	14-4	15	214.2	18.
16	15.9	01.4	66	65.7	05.8	116	115.6	10,1	166	165.4	14:4	216	215.2	18
1 37	1-6-	01.5	67	66.7	05.8	17	116.6	10.2	67	166.4	14.5	17	216.2	18.
11	17.9		68	67.7		18	117.6	10.3	68	167.4	14.6	18	217.2	19.0
10			69	68.7	06.0	19	118.5	10.4	69	168.4	14.7	19	218.2	19.
20	19.9	01.7	70	69.7	06.1	20	119.5	10.4	70	169.4	14.8	20	219.2	19.
21	20.9	01.8	71	70.7	06,2	121	120.5	10.5	171	170.4	14.9	221	220.2	19.
2:		01.9	72	71.7	06.3	22	121.5	10.6	72	171-3	15.0	22	221,2	19.
2	22.9	02.0	1 73	72.7	06.4	23	122,5	10.7	73	173.3	15.1	23	222.2	19.
2			74	73.7	06.5	24	123.5	10.8	74	173-3	15.1	24	223.1	19.
2	24.9	02.2	75	74.7	06.5	25	124-5	10.9	75	174-3	15.2	25	224.1	19.
2	25.9	02.3	76	75.7	06.6	126	125.5	110	176	175.3	15.3	226	\$25.1	19.
2	1 - 6 -	02.4	77	76.7	06.7	27	126.5	11.0	77	176.3	15.4	27	226.1	19.
2	3 27.9			77.7	06,8	28	127.5	11.1	78	177-3	1515	28	227.1	19.
2		2	79	78.7	06.9	29	128.5	11.2	79 80	178.3	15.0	29	220.1	20.
3	29.9	02.0	80	_	27.0	30	129.5	11.3	_	179 3	15.7	30	_	-
3	30.9		81	80.7	07.1	131	130.5	11.4	181	180.3	15.7	231	230.1	20.
3	2 31.9		82	81.7	07.2	32	131.5	11.5	82	181.3	15.8	32	231.1	20.
3	3 32.9	-		82.7		33	132.5	11.6	83	182.3	15.9	33	232.1	20.
3			84	83:7	07.3	34	133.5	11.7	85	184.3	16.1	34	234.1	20.
3			11		07.4	35	134.5		186		16.2		235.1	20.
3					97.5	136	135.5	11.8	180	185.3	16.3	236	236.1	20.
1 3	7 36-9		11 00		21/2	37	136.5	11.9	88	187.3	16.4	37	237.1	10.
3					07.7	38	137-5	12.1	89	188.3	16.4	39	238 1	20.
3		03.4		10	07.8	39	139.5	12.2	90	189 3	16.5	40	239.1	20.
4			-	-		40	_	-		-	16.6	300	298.9	26.
4	40.8		91	90.7	07.9	141	140.5	12.3	191	190.3		400	208.5	34.
4	2 41.8	03.7	92	91.6		42	141.5	12.4	92	102.2	16.8		498.1	43.
1 4	3 42.3	03.8	93	92.6	08.2	43	142-5	12.5	94	192.3	16.9	600	597.7	52.
1 4	4 43.	03.8	94	93.0	08.2	44		12.6	95				697.3	61.
4	5 44.0	03.9	95	94.0	08.3	45		-	196		17.3	-	797.0	-
	6 45.8	04.0	96		08 4	146		12.8	97		17.1		896.6	78.
14	7 40.	04-1	97	90.0	08.5	47	147.5	12.9	98	197.2	17.2	1000	996.3	87.
4	47.	04.2	98		08 6	49	148.4	13.0	99	0 -	17-3	2000	1002.4	174.
100.00	13 5 11 25 1	04.3	100	100.6	08.7	150			200	100.2	17.4	2000	2988.6	201.
5		Lat.	100	39.0	Lat.	Dia	Dep		Diff	Dep	Lat.	Dift.	nep.	القا
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6	De	cree.	240
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Die Lat.	Deo.	DiA	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Den.
1 01.0	00.1	51	50.7	05:3	101	10044		151	150.2	15.8	201	199.9	
1 02.0	00.2	52		05:4	02	101.4		52	151.2	75.9	02	200.9	
3 03.0	00.3	53	52.7		03	102.4		53	152.2	16.0	03	201.9	
4 04.0	00.4	54	53.7	05.6	04	103 4		54	153.2	16.1	04	202.9	21.3
5 00.0	00.5	55	54.7	05.7	05	104.4		55	154.1	16.2	04	207.9	21.4
6 06.0	00.6	56	55.7	05.9	106	105.4		156	155.1	16.3	206	.204.9	21.5
7 07.0	00.7	57	56.7	06 0	07	106.4		57	156.1	16.4	07	205.9	21.6
\$ 08.0	00.8	58	57.7	06.1	08	107.4		58	157.1	16.5	08	206.9	21.7
9 08.9	01.0	59 60	59.7	06.3	10	108.4	11.4	59 60	159.1	16.7	10	207.9	21.0
10 09.9	-	61	60.7	96.4	-	-	11.5	161	160,1	16.8	-	-	
11 10.9	01.1	62	61.7	06.5	111	110.4	11.6	62	161.1	16.9	211	209.8	22.0
13 11.9	01.3	63	62.7	06.6	12	111.4	11.7	63	162,1	17.0	12	211.8	22.7
13 12-9	01.5	64	63.6	06.7	14	113.4	11.9	64	163.1	17.1	14	212.8	22.4
	01.6	65	64.6	06.8		114.4	12.0	65	164.1	17.2	15	213.8	22.5
-	01.7	66	65.6	06.9	15	115.4	12.1	166	165.1	17.3	216	214.8	22.6
16 15.9	01.8	67	66.6	07.0	17	116.4	12.2	67	166.1	17.5	17	215.8	22.7
18 17.9	01.0	68	67.6	07.1	18	117.4	12.3	68	167.1	17.6	18	216,8	22.8
19 18 9	02.0	69	68.6	07.2	19	118.3	12.4	69	168.1	17.7	19	217.8	22.9
10 19.9	02.1	70	69 6	07.3	20	110.3	12.5	70	169.1	17.8	20	218.8	23.0
21 20.9	02.2	71	70.6	07.4	121	120.3	12.6	171	170.1	17.9	221	219.8	23,1
12 21.9	02.3	72	71.6	07.5	22	141.3	12.7	72	174.1	18.0	22	220.8	23.2
13 22.9	02.4	73	72.6	07.6	23	122.3	12.0	73	172.0	18.1	23	221.8	23.3
14 23.9	02.5	74	73.6	07.7	24	123.3	13.0	74	173.0	18.2	24	222.8	23 4
	02.6	75	74.6	07.8	25	124.3	13.1	75	174.0	18.3	25	223.8	23.5
25 24.9 26 25.9	02.7	76	75 6	07.9	126	125.3	13.2	176	175.0	18.4	226	224.8	23.6
27 26.9	02.8	77	76.6	08.0	27	126.3	13.3	77	176.0	18.5	27	225.8	23-7
28 27.8	02.9	78	77.6	08.1	28	127.3	13.4	78	177.0	18.6	28	226.7	23.8
29 28.8	03.0	79	78.6	08.3	29	128.3	13.5	-9	178.0	18.7	29	227.7	23.9
30 29.8	03.1	80	79.6	08.4	30	129.3	13.6	80	179.0	18.8	30	228 7	24.0
11 30.8	03 2	81	80.6	08.5	131	130.3	13.7	181	180.0	18.9	231	229.7	24.1
32 31.8	03.3	82	31.5	08.6	32	131.3	13.8	82	181.0	19.0	32	230.7	24.2
33 32.8	03.4	83	82.5	08.7	.33	132.3	13.9	83	182.0	19.1	33	231.7	24.3
34 33.8	c3.6	84	83.5	08.8	34	133-3	14.0	84	183.0	19.2	34	232.7	24.5
35 34.8 36 35.8	03.7	85	84.5	08 9	35	134 3	14.1	85	184.0	19.3	35	233.7	24.6
36 35.8	03.8	86	85.5	09.0	136	135.3	14.4	186	185.0	19.4	236	234-7	24.7
37 36.8	03.9	87	86.5	09.1	37	136.2	14.3	87	186.0	19.5	37	235.7	24.8
38 37.8 39 38.8	94.0	88	87.5	09.2	38	137.2	14.4	88	187.0	19.6	38	236.7	24.9
40 20 8	04.1	89	38.5	09.3	39	138.2	14.5	89	189.0	19.8	39 4c	237.7	25.0
40 39 8 41 40.8	04.2	90	89.5	09.4	40	139.2	14.6	90	Street, Street, St.	-	_	238.7	25.1
42 42 9	04.3	91	90.5	09.5	141	140.2	14.7	191	189.9	20,0	300	298.4	31.4
42 41.8 43 42 8	04.4	92	91.5	09.6	42	141.2	14.8	92	190.9	20.1	500	397 8	41.8
	04.5	93	93.5	09.7	43	142:2	14.9	93		20.3	600	497-3	62.7
45 44.8	04.7	95	93.5	09.0	44	144.2	14.2	94	193.9	20.4	700	696.2	73.2
46 45.7	04.8			-	-	_		196		20.5	800	-	83.6
47 46.7	04.0		95.5	10.0	146	145.2	15.3		194.9	20.6	900	795.6	
	00.0	97 98	96.5	10.1	47.	147.2	15.4	97	196.9	20.7	1000		104.5
49 48.1	04.1	99	93.5	10.3	49	148.2	15.6	99	197.9	20.8		1989.0	
50 49.7	05.2	100	99.5	10.5	150	149.2	15.7	200	198.9	20.0	3000	2983.5	313.5
ift Dep.		_	Dep.	Lat.	-	Dep.	Lat.	Dut	Dep.	Lat.	Dift	Dep.	Lar
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金		2,0	00.2			51.6	06.3	0			12.4	15		9.9	18.4	2	1 10	99.5
	_		00.4				06.5	0			2.5	53		0.9	18 5	-	02 2	00,5
			00.5		54		c6.6	0.	4 10		2.7	154		2.8	18.7	. 11	03 2	21.5
-	-		00.6				06.7	0	5 104	1.2 1	2.8	55	_		18.9		04 20	2.5
			00.7	1		5.6	06.8	100		.2 1	2.9	156	_	. 0	_	-		3.5
	7 0	.9	00.9			6.6	06.9	07		.2 1	3.0	57		- 01	19.0	11	06 20	4.5
2 7		.9	01.0			0 1	07.1	08			3.1	58	150	102	19.2		08 20	5.4
R		.9	01.2	1 6			7.3	09			3.3	59	157	.8	19.4	11	09 20	6.4 7.4
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1			01.5		2 6		7-4	111			3.5	161	1 59		19.6	2	-	
13			1.6	6	16	2.5	7.7	12			3.6	62	160	.8	19.7			9-4
		£ 1.	1.7	6	4 6		7.8	13	112		3.8	63	161	.8 1	19.8	11	3 21	
25	124	9 0	8.10	6			7.9	15	113	100	9	64	162	0	0.0		4 21	
16		.00	0.1	6	6 6	5.5	8.0	116	-		0.0	65	163		1.0	1	5 21	1.4
17	16	90	2.1	6	7 60	.5 0	8.2	17	116.	_	- 11	166	164	-	0.2	21		
18	1 1		2.2	6	8 67	-5 0	8.3	18	117.		-4	68	166.		0.3	1	7 219	-4
19			2.3	6	9 68	-50	8.4	19	118.		. 11	69	167.	7 2	0.5	- 1		4
20	-		24	70			8 5	20	119.		2 11	70	168.		0.6	3 1		
21			2.6	71		-	8.6	121	120.	1 14	7	-	169.	-	-	2	218	
22	100		2.7	72	-		3.8	22	121.		-11	71 72	170.		8.0	22		-
23	22.	8 0	2.8	73		_	8.9	23	122.	1 15	- 11	73	171.		0.9	25		
24	24		3.0	74			9.0	24	123.			74	172.		1.2	2		
76	25,	_	-	75	3 1000		1	25	124.	15.		75	173.		1.3	24		
7		8 0	3.2	76	75			26	125.1	1.	3 1	76	174.	_	.4	226		
8	27.	8 01	44	77	7.7		-5	27	126.0	1	5		175.7		- 11	27		
19	28.	81 03		79	78.	4 00	.6	28	127.0	1 3.	11		176.7	-	.7	28		
10	29.			80			- 1	30	129.0	1.3.	oll 4		177.7		- 11	29	227.	3 2
d	30.	03	.8	81	80.	-	4 11-	-	130.0		- 11 -	- 1	178.7	-	.9	30	228.	
	31.5	03	.9	82	SI.	4 10	.0	- 1	131.0		11-4		179.6	7	- 11	231	229.	3 2
3	32.5	04	.0	83	82.	4 10			132.0				81.6	1	- 11	32	230.	
4	33.7		- 1	84	83.		-2		133.0	16.		4 1	82.6		- 11	33	231.	
5	34-7	-	- 1	85	84.	-	4	35	134.0	16.4			83.6	22.		34	232.	1 14
6	35-7		4. 1	86	85.	4 10	2 11 2	6	35.0	16.6	- 11	_	84.6	22.	- 11-	35	234.2	-
71	30.7		-	87	86,	3 10.		37 1	36.0	16.7	1 8	7 1	85.6	22.	8	236	234.2	-
9	38.7	04		88 8p	87.	10.	A 11 3		37-0	16.8	8		86.6	22.	- 11	37	235.2	
6	39.7			90	89.	11.	- 11 3		38.0	16.9		9 1	87.6	23.	- 11	39	237.2	
	40.7			_		Townson.	- -		39.0	17.1	9	0 1	88.6	23.	1	40	238.2	29
4	41.7		_ 11		90.	11.	11.4		39.9	17.2	11-7	1 1	89.6	23.	3 3	00	297.8	36
	42.7					11,	- 11 7		40.9	17-3	1 9	2 1	90.6	23.4	4	00	397.0	48
	43-7		- 11	94	93.3	11.	- 11 .		41.9	17.4	11 -		91.6			00	496.3	60
	44-7	05.	- 11		94.3		6 11 3		43.9	17-5			2.5	23.6	- 11 -	000	595.5	73
-7 8	45-7	-	-			11.	- 11 7	- 1		17.7	9		93.5	23.7		00	694.8	85
1	46.6	05.	7	97	96.1	11.	8 4	7 1	44.9	17.0	196	119	14.5			00	794.0	97
	47.6		8 1	98	97.3	11.0	1 4	8 1	6.9	18.0	97	119	5.5	24.0		00	893.3	
	48.6	060	1	99 9	18.3	12.1	4		17.9		99	19	7.5		110	00	992-5	121
	19.6	00.1	1 1 10	00 0	10.3	12.2	15	0 14	18.9	18.2	200		0	24.2	20		985.0	365.
1	Dep	Lar.	110	ift L	Dep.	Lit.			ep.	_	Dif		_	Lat.	Di			Lat.

1		7.1	jere	ncc	9	Juli	uue i	unu	Da	uriu	ve.		177
-		a, là,			1	3 Deg	rees.	any lived	e, eference	-	- in		1
Lat.	Dep.	Dift	Lat.	Dep.	Dif	-	Dep.	1 Diff	Laf.	Dep.	I Dift	. Lat.	Dep
101.0	1.00	51	50.5	07.1	101			151	149.	21.0	201	199.1	28.0
2 02.0	00.3	52	51.5	07.2	02			52			02	200.0	
3 03.0	00.4	53	52.5	07.5	03			53			03		28.3
4 04.0	00.5	54	54.5	07.7	04			54			04	1 1 1 1 1	28.4
6 05.9	00 8	55	55.5	07.8	106		-	55			25	-	28.5
6 05.9	01.0	57	56.4	07.9	07	106.0		156	154-5	21.0	200		28.4 28.5 28.7 28.8 29.0 29.1
7 06.9	01.1	58	57-4	08.1	08	107.0		57	155.5	21.0	08	205.0	28.8
08.9	01.3	59	33.4	08.2	1 09	107.9			157.5	100 0	00	207.0	29.0
10 09.9	01 4	50	59.4	08.4	10	108.9	15.3	59 60	158.4	22.3	10	208.0	29.2
10 09.9	01.5	61	60 4	08.5	111	109.9		161	159.4	22.4	211	200.0	
P 11.9	01.7	62	61.4	08.6	12	110.9	15.6	62	160.4	22.6	12	209.9	29.4
13 13.9	01.8	63	02.4	08.8	13	111.9		63	161.4	22.7	13	210.9	29.6
13 12-9 14 13-9 15 14-9 16 15-8	01.9	64	63.4	c8.9	14	112.9	15.9	64	162.4	22.8	14	211.9	29.
15 14.9	02.1	65	64.4	09.0	15	113.9	16.0	65	163.4	23 0	15	212.9	29.9
10 15.8	02.2	66	05.4	09.2	116	1149	10.1	166	164.4	43.1	216	213.9	30.1
17 16.8	02.4	68	67.3	09.3	17	115.9	16.3	67	165.4	23.2	17	214.9	30.2
18 17.8 19 18.8	02.6	69	68.3	09.6	19	117,8	16 6	69	167.4	23.4	18	215.9	30.3
20 19.8	02 8	70	39.3	99 7	20	118.8	16.7	70	168.4	23.7	19	216.9	30.5
20 19-8	02.9	71	70.3	09.9	121	119.8	16.8	171	169.3	23.8	-	218.0	
12 21.8	03.1	72	71.3	10.0	22	12068	17.0	72	170.3	23.9	221	219.8	30.8
23 22.8	03 2	73	72.3	10.2	23	121.8	17.1	73	171.3	24.1	23	220.8	30.0
24 23.8	03.3	74	73.3	10.3	24	122.8	17.3	74	172.3	24.2	24	221.8	31.0
11 21.8 13 22.8 24 23.8 15 24.8 16 25.7 17 26.7 18 27.7	03.5	75	74.3	10.4	25	123.8	17.4	75	173.3	24.4	2.5	222 8	31.3
26 25.7	03.6	76.	75.3	10.6	126	124.8	17.5	176	174-3	24.5	226	223.8	
27 20.7	03.8	77	70.3	10.7	27	125.8	17.7	77	175-3	24.6	27	224.8	31.5
29 28.7	03.9	78	77.2	10.9	28	126 8	17.8	78	176.3	24.8	23	225.8	31.7
10 20.7	04.2	79 80	79.2	11.1	30	127.7	18.0	79 80	177.3	24.9	29	226.8	31.9
10 19.7 11 30.7	-	81	80 2	11.3			18.2		-	25.1	30	227.8	32.0
32 31.7	04.5	82	31.2	11.4	131	129.7	18.4	181	179.2	25.2	231	228.8	32.2
33 32.7	04.6	83	82.2	11.6	32	131.7	18.5	82	181.2	25.5	32	229.7	32-8
34 33-7	04.7	84	83.2	11.7	34	132.7	18.7	84	182 2	25.6	33	230.7	32.4 32.5
35 34.7	04.0	85	34.2	11.8	35	133-7	18.8	85	183.2	25.8	35	232.7	32.7
35 34-7 36 15-7 37 36.6 38 37.6	05.0	86	35.2	12.0	136	134.2	18.9	186	184.2	25.9	236	233.7	32.0
37 30.6	052	87	86.2	12,1	37	135-7	19.1	87	185.2	26.0	37	234.7	33.0
30 37.6	05.3	88	87.1	12.2	38	136.7	19.2	88	186.2	26.2	38	235.7	33-1
39 38 6	05.4	89	88.1	12.4	39	137.7	19.3	89	187.2	26.3	39	236.7	33-3
40 39.6 41 40.6	05.6	91	89.1	12.7	141	138.6	19.5	90	188.2	26.4	40	237.7	33-4
4 41.6	05.7	91	90.1	12.7		139.6	19.6	90	189.1	26.6	1300	297.1	41.7
43 42.6	06.0		91.1		42	140.0	19.8	-92	190.1	2047	400	396.1	
4 43.6	06.1	93	93.1	12.9	43	141.6	20.0		191.1		500	495.1	69.6
45 44.6	06.2	95	94.1	13.1	44	143 6	20.2	94	192.1	27.0	700	594.2	83-5
44 43.6 45 44.6 46 45.6 47 46.5	06 A	96	95.1	13.4	146	144.6	20.3			-	-	693.2	97-4
47 46.5	06. 5	97	96.1	13.5	47	145.6	20.5		194.1	27.4	800	792.2	111.3
48 47.5	05.7	98	97.0	13.6	48	146.6	20.6	98	196.1	27.6	1000	990.3	
49 48.5	06.8	99	98.0	13.8	49	147.6	20.7	99	197.1	27.7	2000	1980.6	278.4
50 49 5 Diff Lep.	07.0	100	990	13.0	150	148.5	20.9	200	198.1	27.8	3000	2970 9	117.6
Trep.	Lac.	Dif	Dep.	L.t.	D.A	Dep.	Lat	Dif	Dep.	Lat.	DiA.	Dep.	Lag

Dep. 24. 24. 24. 24. 25. 25. 25. 25. 25. 25. 25. 25. 25. 26. 26. 26. 26. 26. 26. 27. 27. 3 27. 4 27. 5 28. 5 28. 7 28. 9 29. 0 29. 1 29. 2

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						9	Deg	rees.				Car.		
Dift	Lat.	Dep. 1	Dif	Lat.	Dep .	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift. I	Lat.	Dep.
1	01.0	00,2	51	50.4	08.0	101	99.8	15.8	151	149.1	23.6	201	198.5	
	02.0	00.3	52	51.4	08.1	02	100.7	16.0	52	150.1	23.8	02	199.5	31.
3	03.0	00.5	53	52.3	08.3	03	101.7	16.1	53	151.1	23.9	03	200.5	31.
4	04.0	00.6	54	53 3	08.4	04	102.7	16.3	54	152.1	24.1	04	201.5	31.
5	04.9	8.00	55	54 3	08.6	05	103.7	16.4	55	153.1	24.2	05	202.5	32.
6	05.9	00.9	56	55-3	03.8	106	104.7	16.6	156	154.1	24.4	206	203.5	32.5
7 8	06.9	01.1	57	56.3	08.9	07	105.7	16.7	57	155.1	24.6	07	204.5	32.4
	07.9	01.3	58	57.3	09.1	08	106.7	16.9	58	156.1	24.7	08	205.4	32.
9	08.9	01.4	59	58.3	09.2	09	107.7	17.0	59	1.57.0	24.9	09	206.4	32
10	09.9	01.6	60	59.3	09.4	10	108.6	17.2	60	158.0	25.0	10	207 4	32.
1.1	10.9	01.7	61	60.2	09.5	111	109.6	17.4	161	159.0	25.2	211	208.4	33.0
12	11.9	01.9	62	61.2	09.7	12	110.6	17.5	62	160.0	25.3	12	209.4	33-
13	12.8	02.0	63	62.2	09.9	13	111.6	17.7	63	161.0	25.5	13	210.4	33.
14	13.8	02.2	64	63.2	10,0	14	112.6	17.8	64	162.0	25.6	14	211.4	33-
15	14.8	02.3	65	64.2	10.2	15	113.6	18.0	65	163.0	25.8	15	212.4	33-
16	15.8	02.5	66	65.2	10.3	116	114.6	18.1	166	164.0	26.0	216	213.3	33-
17	16.8	02.7	67	66.2	10.5	17	115.6	18.3	67	164 9	26.1	17	214.3	33-
18	17.8	02.8	68	67.2	10.6	18	116.5	18.5	68	165.9	26.3	18	215.3	34-
19	18.8	03.0	69	68.2	10.8	19	117.5		69	166.9		19	216.3	34-
10	_	03.1	70		10.9	20	118.5	18.8	70	167.9	26.6	20	217.3	34-
21	20.7	03.3	71	70.1	11.1	121	119.5	18.9	173	168.9	26.7	221	218.3	34.
22	21.7	03.4	72	71.1	11.3	22	120.5	19.1	72	169.9	26.9	22	219.3	34-
23	23.7	03.8	73	73.1	11.4	23	121.5		73	170 9	27.1	23	220.2	34.
24	24.7	03.9	74	74.1	11.7	24	122.5		74	171.9	27.2	24	221.2	35
-	_	_		-		25	123.5	-	75		-	25	221.2	35
26	25.7	04.4	76	75.1	11.9	126	124.5		176	173.8	27.5	226	223.2	350
27	27.7	04.4	77	77.0	12.2	27	125.4		77	174.8	27.8	27	224.2	35.
29	28.6	04-5	79	78.0	12.4	29	127.4		79		28.c		226.2	35
30	29.6		80		12.5	30	128.4		86		28.2	30	-217.2	36.
31	30.6	04.8	81	80.0	12.7	_	129-4	-	161	-	28.3	231	228.2	36.
32	31.6		82	81.0	12.8	131		1 2	82	179.8	28.5	32	229.1	36.
33	32.6	05.2	83	82.0	13.0	32 33	131.4	0	83	180.7	28 6	33	230.1	36.
34	33.6	05.3	84		13.1	34	132.4	100-113	1 84		28.8	34	231.1	36.
35	34.6	05.5	85	84.0	13.3	35	200		85	182.7	28.9	35	232-1	36.
36	35.6	05.6	86			136		1	186		29.1	236	233.1	36.
37	36.5		87	85.9	13.6	37	135.3	1 1 1 1 1 1 m	89		29.2	37	234.1	37
38	37.5	05.9	88	86.9	13.8	38			88		29.4	38	235.1	37
39	38.5	06.1	89		13.9	39	137-3	21.7	89	186.7	29.6	39	236.1	37
40	39.5	06.3	90	88.9	14 1	40	138.3	21.9	90	187-7	29.7	40	237.0	37
41	40.5	06.4	91	89.9	14.2		139-3	22.1	191	188.7	29.9	300	296.3	46
42	41.5	06 6	92	90 9	24.4	42	140.3		92	189.6	30.0	400	395-1	03
43	42.5	06.7	93	91.9	14-5	43	141.2	22.4	1 93	1190.6	30.2	500	493.8	170
44	43-5		94	92 8	14.7.		142.2		94	191.6	30.3	600	592.0	93
45	44.4	07.0	95		14.9	145	143.2		95	192.6			601.4	100
46	45.4	07.2		94.8	15.0		144.2	22.8	196	193.6	30.7	800	790.2	125
47	46.4	07.4	97	95.8	15.2	47	345.2	23.0	97	194.6	30.8	900	\$83 9	
48	47.4	07.5	98	96.8	253	48	146 2		98	195.6	31.0	1000	987.7	156
49		07.7		97.8	15.5	40	147.2	1000000	99	196.6		2000	1975.4	469
60	49.4	07.8	100		15.6	150	148.2			197.5	31.3	3000	2963.1	Lat
DHILL	Dep.	Lat.	Dist	Dep.	Lat.	Dift	Dep.	Lat	Dat	Dep.	Lat.	Dift.	Dep.	100

10 Degrees.													
Die Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dia		Dep.	Dift.	Lat.	Dep.
101.0	00.2	51	50.2	08.8	101	99.5	17.5	151	148.7	26.2	201	197.9	34.9
2 02.0	00.3	52	51.2	09.0	02	100.4	17.7	52	149.7	26.4	02	198.9	35.0
3 03.0	00.5	53	53.2	09.2	03	101.4	17.9	53	150.7	26.5	03	199 9	35.2
4 03-9	00.7	54 55	54.2	09.5	05	103.4	18.2	54	151.7	26.9	04	200.9	35.4
-	01.0	56	55.1	09.7	106	104.4	18.4	156	153.6	27.1	206	_	35.5
6 05.9	01.2	57	56.1	09.9	07	105.4	18.€	57	154.6	27.2	07	203.9	35.7
8 07.9	01.4	58	57.1	10.1	08	106.4	18.7	58	155 6	27.4	08	204.8	35.9
9 08.9	01.6	59	58.1	10.2	09	107.3	18.9	1 59	156.6	27.6	09	205.8	36.2
	01.7	60	59.1	10.4	10	108.3	19.1	60	157.6	27.7	10	206.8	36.4
10 09.8	01.9	61	60.1	10.6	111	109.3	19.2	161	1 58.6	27.9	211	207.8	36.6
13 11.8	02.1	62	61.1	10.8	12	110.3	19.4	62	159.5	28.1	12	208.8	36.8
13 12.8	02.3	63	62.0	10.9	13	111.3	19.6	63	160.5	28.3	13	209.8	36.9
14 13.8	02.6	64	64.0	11.1	14	112.3	19.8	64	161.5	28.6	14	210.7	37-1
	02.8		_	-		113.3	_			28.8	15	211.7	37.3
	02.0	66	66.0	11.4	116	114.2	20.1	166	164.5	29.0	216	212.7	37-5
17 16.7	03.1	63	67.0	11.8	18	116.2	20.5	68	165.4	29.1	17	213.7	37-6
19 18.7	03 3	69	63.0	12.0	19	117.2	20.6	69	166.4	29.3	19	215.7	37.8 38.0
	03.5	70	68.9	12.1	20	118.2	20.8	70	167.4	29.5	20	216.7	38.1
20 19.7	03.6	71	69.9	12.3	121	119.2	21.0	171	168.4	29.7	221	217.6	38.3
21 21.7	03.8	72	70.9	12.5	22	120.1	21.2	72	169.4	29.8	22	218.6	28.€
13 22.7	04.0	73	71.9	12.7	23	121,1	21.3	73	170.4	30.0	23	219.6	38.7
24 23.6	04.2	74	72.9	12.8	24	122.1	21.5	74	171.4	30.2	24	220.6	38.7
25 24.6 26 25.6	04.3	75	73:9	13.0	25	123.1	21.7	75	172.3	30.3	25	221.6	39.0
26 25.6	04-5	76	74.8	13.2	126	124.1	21,8	176	173.3	30.5	226	222.6	39.2
28 27.6	04.7	77 78	75.8	13.4	27	125.1	22.0	77	174-3	30.7	27	223.5	39-4
29 28.6	05.0	79	77.8	13.5	29	127.0	22.4	78	175.3	30.9	28	224.5	39.5
30 29.5	05.2	80	78.8	13.9	30	128.0	22.5	79 80	177.3	31.2	30	225.5	39.7
31 30.5	05.4	81	79.8	14.0	131	129.0	22.7	181	178.2	31.4	231	227.5	39.9
32 31.5	05.5	82	80,8	14.2	32	130.0	22.9	82	179.2	31,6	32	228,5	40.1
33 32.5	05.7	83	81.7	14.4	33	131.0	23.1	83	180.2	31.7	33	229.5	40.4
34 33.5	05.9	84	82.7	14.6	34	132.0	23.2	84	181.2	31.9	34	230.4	40.6
35 34 5 36 35.5	06.1	85	83.7	14.7	35	132.9	23.4	45	182.2	32.1	35	231 4	40.7
30 35.5	06.2	86	84.7	14.9	136	133.9	23.6	186	183.2	32.3	236	232.4	40.9
37 36.4 38 37.4	06.4	87	85.7	15.1	37	134.9	23.8	87	184.2	32.4	37	233-4	41.2
39 38.4	06.8	88 89	87.6	15.3	38	135.9	23.9	88 8g	185.1	32.6	38	234.4	41 3
40 39-4	06.9	90	88.6	15.4	39	136.9	24.1	90	187.1	32.9	39	235.4	41.4
41 40.4	07.1	-	89.6	15.8	141	138.9		191	188.1	_	-		41.6
42 41.4	07.3	91	90.6	16.0	42	130.9	24.4	92	189.1	33.1	300	295 4 393·9	69.5
43 42.3	07.5	93		16.1		30			190.1	33.5		492.4	86.8
44 43.3	07.5	94	92.6	16.3	44	141.8	25.0	94	190.1	33.6	600	590.9	104.2
45 44-3	07.8	95	93 6	16.5	45	142.8	251	95	192.0	33.8	700	590.9 689.4	121.6
40 45.3	08.0	96	94.5	16.0	146	143.8	25.3	196	193.0	34.0	800	787.9	138.9
47 46,3	08.1	97	95.5	16.8	47	144.8	25.5	97	194.0	34.2	900	886.3	156:3
40 48.2	08,3	98	96.5	17.0	48	145.7	25.7	98	195.0	34.3	1000	984.8	173.7
50 49.2	08.5	99	97-5	17.2	49	146.7	25.8	99	196.0	34.5		1969.6	347.4
50 49.2 Diff Oep.	Lat	05	98.5 Dep.	17.3 Lat.	150	147.7		200	197.0 Dep.	34.7 Lat.	3000 Dift.	2954.4	521.1
	- water	Dill	Dep.	Lat. I	OIII	Dep.	Lat.	וווען	Dep. 1	rat.	Dift.	Dep.	Lat.
						-							

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Difference of Latitude and Departure.

-		and and a	- Total Marie I	-		1	1 De	gree.	5.					
Dift	Lat.	Dep.	I Dist	ILat.	Dep.	HDiff	170	Dep.	-	Lat.	Dep	I Ditt	· Lat.	10.
7	01.0	00.2	51	50.1		101	99.			148.2	28.8		-	Del
2	02.0	00.4	52	51.0	09.9	1 02				1000			-31.	
3	02.9	00,6	53	52.0		03	101.				1		199.	3 3
4	03.9	00 8	54	53.0		04	102.	19.8	54					
5	04.9	01.0	55	54.0		05	101	20.0	1 55		29.6			1 3
6	05.9	01.1	56	55.0	10.7	106				153.1	29.8	20	202.	
7	06.9	01.3	57	50.0	10.9	07			1 57	154.1	30.0			
8	07.9	01.5	58	56.9		08	125		1 58	155.1	10			
9	08.8	01.7	59	57.9		10	1 1 1		59	150.1		0	1 2	39
10	-	02.1	61		-	-	-	-	11				206.1	40
11	10.8	02.1	62	59.9	11.6	111	109.0		11.01		13.0			
12	12.8	02.5	63	61.8	12.0	13			62		100	11		4
13	13.7	02.7	64	62.8	12.2	14			63	161.0	13			
15	14.7	02,9	65		12.4	15		and the same of			31.3			1
16	15.7	03.1	66	64.8	12.6	116		-	166	1	-	-		1-
17	16.7	03.2	67	65.8	12.3	17	1 3 3 4	22.3		163.9	31.7	11		1 7-
18	17.7	03.4	68	66.7	13.0	18			68		32.1			
19	18.7	03.6	69	67.7	13.2	119	116.8		69	165.9	32.2			
20	19.6	03.8	70	68.7	13.4	20	117.8	2 .9	70	166.9	32.4			
20	20.0	04,0	71	69.7	13.5	121	118.8	23:1	171	167.9	32.0	11	-	-
22	21.6	04.2	72	70.7	13.7	22	119.8		72	168.8	32 8	22		
23	22.6		73	71.7	13.9	23			73	169.8	33.0		1 0 -	
24	23.6	04.6	74	72.6	14.1	24	121.7		74	170.8	33.2	24	2199	42
25	24.5	04.8	75	73.6		25	122 7	23.9	75	171.8	33-4	29	_	42
26	25.5	05.0	76	74.6	14.5	126		24.0	176	172.8	33.6	226	221.8	43.
27	26.5		77	75.6	1000	27	124.7	24.2	77	173.7	33.8	27	222.8	43
28	27.5	05.3	78 79	27.5	14.9	28	125.6		78	174.7	34.0		223.8	43
30	29.4	05.7	80	78.5	15.3	30	127.6		79 80	175.7	34.2	29	224.8	43
_	30.4	05.9	81	79.5	15.5	-	128.6	-	181	-	34-3	30	-	43
31	31.4	06.1	82	80.5	15.6	32	129.6	25.0	82	177.7	34-5	231	226.7	44
32	32.4	06.3	83	81.5	15.8	33	130.6		83	179.6	34 7	32	227 7	44.
34	33.4	06.5	84	82.5	16.0	34	131.5	25.6	81	180.6	34.9	33	229.7	44.
35	34.4	06.7	85	83.4	16.2	35	132.5	25.8	85	181.6	35 3	34	230.7	44.
36	35.3	06.9	86	84.4	16.4	136	133.5	25:9	186	184.6	35.5	236	231 7	45.
37	36.3	07.1	87	85.4	16.6	37	134.5	26.1	87	183.6	35.7	37	232.6	45.
38	37.3	07.3	88	36.4	16.8	38	135.5	26.3	88	184.5	35.9	38	233.6	45.
39	38.3	07.4	89	87.4	17.0	39	136.4	26.5	89	185.5	36.1	39	234.6	45.
40	39 3	07.6	90	88.3	17.2	40	137-4	26.7	90	286.5	36.3	40	235.6	45.
41	40.2	07.8	9,1	89.3	17.4	141	138.4		191	187.5	36.4		294.5	57.
	41.2	08.0			17.6		139.4			188.5	36.6	400	392-7	
43	43.2	08.4		91.3		43	140.4		93	189.4	36.8		490.8	954
44	44.2	c8.6	94	93.3	17.9	44	141.3	27.5	94	190.4	37.0	600	589.6 687.1	133
46	45.2	08.8	96	-	-	45		27.7	95	191.4	37-2	700		_
40	46 1	09.0	97	94.2	18 6	47	143-3	27.9	196	192.4	37.4	800	785.3	152.
47	47.1	09.2	98	96.2	18.7	48	144.3 145.3		97	193.4	37.8	900	981.6	190.
49	48.1	c9.3	99	97.2		49	146.3	28.4	99	195.4	38.0	2000	1963 2	381.
50	49.1	00.5	100	98.2	19.1		147 2	28.6	200	196.3	38.2	1000	2944.8	572.
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3 02.9 00.6 53 51.8 11.0 03 100 7 21.4 53 149.6 31.8 03 1 4 03.9 00.8 54 52.8 11.2 04 101.7 21.6 54 150.6 32.0 04 1 5 04.9 01.0 55 53.8 11.4 05 102.7 21.8 55 151.6 32.2 05 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		41.5
4 03.9 00.8 54 52.8 11.2 04 101.7 21.6 54 150.6 32.0 04 1 504.9 01.0 55 53.8 11.4 05 102.7 21.8 55 151.6 32.2 05 2 1 6 05.9 01.2 56 54.8 11.6 106 103.7 22.0 156 152.6 32.4 206 2 7 06.8 01.5 57 55.7 11.9 07 104.6 22.3 57 153.5 32.7 07 2 8 07.8 01.7 58 56.7 12.1 08 105.6 22.5 58 154.5 32.9 08 2 9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	97.6	42.0
5049 010 55 53.8 11.4 05 102.7 21.8 55 151.6 32.2 05 2 605.9 01.2 56 54.8 11.6 106 103.7 22.0 156 152.6 32.4 206 2 7 06.8 01.5 57 55.7 11.9 07 104.6 22.3 57 153.5 32.7 07 2 8 07.8 01.7 58 56.7 12.1 08 105.6 22.5 58 154.5 32.9 08 2 9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	8.5	42.
6 05.9 01.2 56 54.8 11.6 106 103.7 22.0 156 152.6 32.4 206 2 7 06.8 01.5 57 55.7 11.9 07 104.6 22.3 57 153.5 32.7 07 2 8 07.8 01.7 58 56.7 12.1 c8 105.6 22.5 58 154.5 32.9 08 2 9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	9-5	42.6
7 06.8 01.5 57 55.7 11.9 07 104.6 22.3 57 153.5 32.7 07 2 8 07.8 01.7 58 56.7 12.1 08 105.6 22.5 58 154.5 32.9 08 2 9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	~	
\$ 07.8 01.7 58 56.7 12.1 c8 105.6 22.5 58 154.5 32.9 08 2 9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	1.5	42.8
9 08.8 01.9 59 57.7 12.3 09 106.6 22.7 59 155.5 33.1 09 2 109.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	3.4	43.
10 09.8 02.1 60 58.7 12.5 10 107.6 22.9 60 156.5 33.3 10 2 11 10.8 02.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 11 11.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	4.4	43.5
11 10.8 c2.3 61 59.7 12.7 111 108.6 23.1 161 157.5 33.5 211 2 111.7 02.5 62 60.6 12.9 12 109.5 23.3 62 158.4 33.7 12 2	5.4	43.
12 11.7 02.5 62 00.0 12.9 12 109.5 23.3 62 158.4 33.7 12 2	6.4	43.9
	7.3	44.1
12 12 7 02.7 63 61.5 13.1 13 110.5 23.5 63 159.4 33.9 13 2	8.3	44.
14 11.7 02.9 64 62.6 13.3 14 111.5 23.7 64 160.4 34 1 14 2	9.3	44.9
15 14.7 03.1 65 63.6 13.5 15 112 5 23.9 65 161.4 34.3 15 2	0.3	44-7
16 15.6 03.3 66 04 5 13.7 116 113.4 24.1 166 162.3 34.5 216 2	1.2	44.9
17 16.6 03.5 67 65.5 13.9 17 114.4 24.3 67 163.3 34.7 17 2	2.2	45.1
18 17.6 03.7 68 66.5 14.1 18 115.4 24.5 68 164.3 34.9 18 2	3.2	45.3
	4.2	45.6
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	6.1	46.0
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	7 9	48.5
34 33.3 07.1 84 82.2 17.5 34 131.1 27.9 84 180.0 38.3 34 23	8.9	48.7
35 34.2 07.3 85 83.1 17.7 1 35 132 0 28.1 85 180 9 38 5 35 25	9.8	48:9
36 35.2 07.5 86 84.1 17.9 136 133 0 28.3 186 181.9 38.7 236 2	0.8	49.1
	1.8	49-3
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39 38.1 08.1 89 87.0 18.5 39 135.9 28.9 89 184.8 39.3 39 2	3.7	49.7
The	4.7	49.9
41 40.1 08.5 91 89.0 18.9 141 137.9 29.3 191 186.8 39.7 300 29	3.4	62.4
41 41.1 08.7 92 90.0 19-1 42 138.9 29.5 92 187.8 39.9 400 39	1.3	83.2
43 42.1 08.9 93 91.0 19.3 43 139.9 29.7 93 188.8 40.1 500 48 44 43.0 09.2 94 91.9 19 6 44 140.8 30.0 94 189.7 40.4 600 38	9.1	104.0
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40 45 0 09.6 96 93.9 20.0 146 142.8 30.4 196 191.7 40.8 800 75 47 46.0 09.8 97 94.9 20.2 47 143.8 30.6 97 192.7 41.0 900 88	2.5	187.1
47 44.0 09.8 97 94.9 20.2 47 143.8 30.6 97 192.7 41.0 900 88 48 46.9 10.0 98 95.8 20.4 48 144.7 30.8 98 193 6 41 2 1000 97	8 2	207.9
49 47 9 10.2 99 96.8 20.6 49 1457 31.0 99 194.6 41.4 2003 196		415.8
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1	14.6	1-3-	11		14.6	15	112.1	25.9	6	160.8	37.1			5 48.
16			66		14.8	116	113.0	26.1		161.7	37-3			
17		1 2 -				17	114.0	26.3	67		37.6	17		4 48
18	17.5	04.0			1 00	18	1 2	26.5	68	163.7	37.8	3 ,9		
19			69	100		19	116.0	26.8	1 69	164.7	138.0	10		. 13.
20	19.5		70		-	20	116.9	27.0	70	165.6	38.2	20		
21	20.5		71	69.2		121	117.9	27.2	171	166.6	38.5	221		
22		04-9	72		16.2	22	118.9	27.4	72	167.6		22		3 49.
23			73		16.4	23	119.8	27.7	1 73	168.6	38.9			3 50.2
24	23.4	05.4	74		16.6	24	120.8	27.9	74	169.5	39.1			3 50.4
25			75			25	121.8	28.1	75	170.5	39.4			
26		05.8	76	74.1	17.1	126	122.8	28.3	176	171.5	39.6		-	_
27		06.1	77	75.0	17.3	27	123.7	28.6	1 77	172.5	39.8	27	221,	
28	27.3	06.3	78	76.0		28	124.7	28.8	78	173.4	40.0			1 3
29	28.3	06.5	79		17.8	29	125.7	29.0	79	174.4	40.3	29	223.	
30	29.2	_	80	-	180	30	126.7	29.2	80	175.4	40.5	30	224.	
31	30.2	27.0	81	78.9	18,2	131	127.6	29.5	181	176.4	40.7		\$25.	_
32		07.2	82	79.9	18 4	32	128.6	29.7	82	177-3	40.9		226.	
33	32.2	07.4	83	80.9	18.7	33	129.6	29.9	83	178.3	41.2		227.0	
34	33.I 34.I	07.6	84	81.8	18.9	34	130.6	30 1	84	179 3	41.4	34	228.0	
35		07.9	85	02.0	19.1	35	131.5	30.4	85	180.3	41.6	35	220.0	52.9
36	35.1	08.1	86	83.8	19.3	136	132.5	30.6	186	181.2	41 8	236	230.0	
37	36.1	08.5	87	84.8		37	133.5	30.8	87	182.2	42.1	37	230.9	
38	37.0	08.8	88	85.7	19.8	38	134.5	31.0	88	183.2	42.3		231.9	
39 40		9.0	90	87.7	20.2	39	135.4	31.3	89	184.2	42.5	39	232.9	
-	_	_			- 12	40	136.4	31.5	90	185.1	42.7	40	233.9	
		09.2	91	88.7	20.5	141	137.4	31.7	191	186.1	43.0	300	292.3	67.5
42	45.0	09.4		100.6	20.7	200	138.4			187.1	43.2	400		.90.0
	and the	09.7		91.6	20.9		139-3		93	188.1	43.4	500	487.2	
44		10.1	94	92.6	21.1	44	140.3		94	189.0		600	584.6	135.0
		_	95	_	-	45		32.6	95	190.0	43.9	700	682.1	
	44.8	10.3	96	93.5	21.6	146		32.8	196	1910		800	779-5	180.0
	45.8	10.8	97	94.5	21.8	47	143.2	33.1	97	192.0	44 3	900	876.9	202.5
	47.7	11.0	98	95.5	22.0	48	144.2	3:-3	98	192.9	44.5	1000		225.0
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Units	Lat.	Dep.	t Dift	Lat.	Dep.	Dift		Dep.	(Dift	Lat.	Dep.	Dift.	Lat.	Dep.
-	01.0	00.2	51	49-5		IOI	98.0	24.4	151	146.5	36.5	201	195.0	48.6
	01.9	00.5	52	50.5	12 3 12.6	02	99.0	24.7	52	147.5	36.8	02	196.0	48.9
	02.9	00.7	53	51.4	12.8	03	99.9	24.9	53	148.5	37.0	03	197.0	49.1
4	03.9	01.0	54	52.4	13.1	04	100.9	25.2	54	149.4	37-3	04	197.9	49.4
13	04.9	01.2	55	53.4	13.3	05	101.9	25.4	55	150.4	37.5	00		49.6
6	05.8	01.5	56	54.3	13.0	106	102.8	25.7	156	151.4	37.7	206	199.9	49.9
17	06.8	01.7	57	55.3	13.8	07	103.8	25.9	57	152.3	38.0	07	200 8	50.3
1 8	07.8	01.9	58	57.2	14.0	08	105.8	26.4	58	153.3	38.5	09	202.8	50.6
9		02.4	59 65	58 2	14.5	10	106.7	26.6	60	155.2	38.7	10	203.8	50.8
10	39.7	02.7	61	59.2	14.8	-	107.7	26.9	161	156.2	_	211	204.7	51.1
	10.7	02.9	62	00.2	15.0	111	108.7	27.1	62	157.2	39.0	12	205.7	51.3
12	12.6	03.1	63	61.1	15.2	13	109.6	27.3	63	158.2	39.4	13	206 7	51.5
14	13.6	03.4	64	62.1	15.5	14	110.6	27.6	64	159.1	39-7	14	207.6	51.8
	14 6	c3.6	65	63.1	15.7	15	111.6	27.8	65	160.T	39.9	15	208.6	52.0
15	15.5	03.9	66	64.0	16.0	116	112.6	28.1	166	161.1	40.2	216	209.6	52.3
17	16.5	04.1	6-	65.0	16.2		113.5	28.3	67	162.0	40.4	17	210.5	52.5
18	17.5	04.4	68	66.0	16.5	17	114.5	28.0	68	163.0	40.7	18	211.5	52.8
19	18 4	04.6	69	66.9	16.7	19	115.5	28.8	69	164.0	40.9	19	212.5	53.0
20	19.4	04.8	70	67.9	16.9	20	116.4	29.0	70	164.9	41.1	20	213.5	53.2
20	20.4	05.1	71	68.9	17.2	121	117.4	29.3	171	165.9	41.4	221	214.4	53-5
12	21.3	05.3	72	69.9	17.4	22	118.4	29.5	72	166.9	41.6	22	215.4	53 7
13	12.3	05.6	73	70.8	17.7	23	119.3	29.8	73	167.9	41.9	23	215.4	54.0
24	23 3	05.8	74	71.8	17.9	24	120 3	30.0	74	168.8	42 1	24	217.3	54-4
25	243	06 0	75	72.8	18.1	25	111.3	30.2	75	169.8	42.3	25	218.3	54.4
26	25.2	06.3	76	737	18.4	126	122.3	30.5	176	170.8	42.6	126	219.3	54.7
127	16,2	06.5	77	74.7	18.6	27	123.2	30.7	77	171.7	42.8	27	220.3	54.9
28	27.2	06.8	78	757	18.9	28	124.2	31.0	78	172.7	43.1	28	221.2	55.2
29	28.1	07.0	79	76.7	19.1	29	125.2	31.2	79	173.7	43.3	29	222.2	55.4
30	29.1	07.3	80	77.6	194	30	-	31.5	80	174.6	43.6	30	223 2	55.7
31	30.1	07.5	81	78.6	19.6	131	127.1	31.7	181	175.6	43.8	231	224.1	55.9
32	31.0	07.7	82	79.6	19.8	32	128.1	31.9	82	176.6	44.0	32	225.1	56.4
33	32.0	08.2	83 84	31.5	20.3	33	129 0	32.2	8 ₃ 8 ₄	178.5	44.5	33 34	227.0	56.6
34	33.0 34 0	08.5	85	82.5	20.6	34	131.0	32.7	85	179.5	44.8	35	228 0	56.0
36	_	08.7		82.5	20.8	13	-	-	186	180.5	_	236		-
37	34-9	09.0	86	83.4 84.4	21.1	136	132.0	32.9	87	181.4	45.0	37	229.0	57.1 57.4
38	35.9 36.9	09.2	88	85.4	21.3	38	133.9	33.4	88	182.4	45.5	38	230.9	57.6
39	37.8	09.4	89	86.4	21.5	39	134 9	33.6	89	183.4	45.7	39	231.9	57.8
40	18 8	09.7	90	87.3	21.8	40	135.8	33.9	90	184.4	46.0	40	232.9	58.1
41	39 8	09.9	91	38.3	22.0	141	136.8	34.1	191	185.3	46.2	300	291.1	72.6
		10.2	92	89.3		42	0	34-4	92	186.3	.6	400	388 I	96.8
		10.4	93	90.2		43	138.7	34.6	93	187.3	46.7	500	485.2	121.0
44	42.7	10.6	94	91.2	22.7		139.7	34.8	94	188.2	46.9	600		145.2
45	43 7	10.9	95	92 2	23.0	45	140 7	35.1	95	189.2	47.2	700	679.2	169.4
40	44.6	11.1	96	93.1	-	146	142.7	35-3	196	190.2	47-4	Soc	776 2	193.5
47	45.6	11.4	97	94.1	23.5	47	142.6	35.6	97	191.1	47-7	900	873-3	217.7
48	46.6	11.6	98	95.1	23.7	48	143.6	35.8	98	192.1	47.9	1000	970-3	
49	47.5	11.9	99			49	144.6	36.1	99	193.1	48.2	2000	1940.6	
30	48.5	12.1	100	97.0	24.2	150	145.5	76.3	200	194.1	48.4	300	29109	725.7
Vitt	Dep.	Lat.	Diff	Dep.	Lit-	DiA	Dep.	Lat.	Ditt	Dep.	Lat.	Dift	Den.	Lar.
-						7	6 De	gree	s					

1 2 3 4	Lat.	Dep.	1Dift	11	- 4.4									_
3 4	01.0			LaL	Dep.	DA	Lat.	Dep.	Dist	Lat.	Dep.	Dift.	Lat.	1 De
3		00.3	51	49-3	13.2	101	97.6	26.1	151	145 8	39.1	201	194-1	
4	01.9	00.5	52	50.2	13.5	02	98.5	26.4	52	146.8	39.3	02	195.1	
4	02.9	8.00	53	51.2	13.7	03	99.5	26.7	53	147.8	39.6	03	196.1	
	03.9	01.0	54	52.2	14.0	04	100.5	26.9	54	148.7	39.9	04	197.0	9
-		01.3	55	53.1	14.2	0;	101.4	27.2	55	149.7	40.1	05	198.0	
6	058	01.6	- 56.	54-1	14.5	106	102.4	27.4	156	150.7	40.4	206	199.0	-
7	06.8	01.8	57	55.1		07	103.4	27.7	57	151.6	40.6	07	199.9	
1	07.7	02.1	58	56.C		08	104.3	28.0	58		40.9		200.9	
	08.7	02.3	59	57.0	15.3	09	105.3	28.2	59	153.6	41.1	09	201.9	
10	09.7	02.6	60	58.0	15.5	10	106.2	28.5	60	154.:	41.4	10	202.8	54
7.7	10.6	02.8	.61	58.9	15.8	111	107.2	28.7	101	155.5	41.7	211	203.8	54
12		03.1	62		16.0	12	108.2	29.0	62	156.5	41.9	12	204.8	
13	12.6	_	63	60.9		13	109.1	29.2	63	157.4	42.2	13	205.7	55
14	13.5	03.6	64		16 6	14	110.1	29.5	64	158.4	42.4	14	206.7	55
15	14.5	01.9	65	62.8	-	15	111.1	29.8	65	159.4	42 7	14	207.7	55
16	15.5	04.1	66			116	112.0	-30.0	166	160.3	43,0	216	208,6	55
17	16.4	04.4	67	64.7		17	1130	30.3	67	161.3	43.2	17	209.6	56
18	17.4	04.7	68	65.7	17.6	18	114.0	30.5	68	16z.3	43.5	18	210.6	56
10	18.4	04.9	69	66.6		19	114.9	30.8	69	163.2	43.7	19	211.4	56
20	19.3	05.2	70	67.6		20	115.9	31.1	70	164.2	44.0	30	212.5	56
* - a	20.3	05.4	-71	68.6	18.4	121	116.9	31.3	171	165.2	44.3	221	213.5	57
22	21.2	05.7	72	69.5		22	117.8	31.6	72	166.1	44.5	22	214 4	57
23	22.2	c6.0	73	70.5		23	118.8	31.8	73	167.1	44 8	23	215.4	57
24	23.2	06.2 c6.5	74	71.5	35 m x 1	24	119.8	32.1	74	168.1	45.0	24	216.4	58
25	24.1		75	72.4	-	25	120.7	32.4	75	169 0	45-3	25	217.3	58.
26	25.1	06.7	.76	73 4	19.7	126	121.7	32.0	176	170.0	45.5	226	218.3	58.
27	26.1	07.0	77	74.4		27	122.7	32.9	77	171.0		27-	219.3	58
28	27.0	07.2	78	75.3		28	123 6	33.1	78		46.1	28	220.2	59
-	28.0	07.5	80	76.3		29	124.6	33.4	79	172.9		29	221.2	59
30	290	-	81	-		30	125.6	33.6	-80	173.9		30	222.2	39
31	29.9	c8.0		78.2	210	131	126.5	33.9	181	174.8	46.8	231	223.1	59
_	30.9	08.3	82	80.2	21,2	32	127.5	34.2	82	175.8	Car and	32	224.1	60
	31.9	08.8	84			_33	128.5	34.4	83	176.8	47-4	33	225.1	60
	33.8	09.1	85			34	129 4	34.7	85	177.7	47.6	34	220.0	60
		-	86	-		35	130 4	34.9	-	_	47.0	35	227.0	-
	34.8	09.3	87	83.1	22.3	:36	131.4	35.2	186	179.7	48.1	236	228.0	61
37	35.7	09.6	88			37	132.3	35.5	87	180,6	48.4	37	228.9	61
38	37.7	10.1	89	86.0		38	133 3	35.7	80		48.9	38	229.9	61
	38.6	10.4	90	86.9		39	134.3	36.2	90	183.5	49.2	39	231.8	62
	39.6	10.6	-		23 6			-	-	.0.	The same of	40		-
41	39.0	10.9			23.8	141	136.2	36.5	191	184.5	49.4	300	289.8	77
	41.5	11.1	02	80.8	24.1		137.2	37.0		185.5	49.7	500	483.0	
	42.5	11.4	04	90.8	24.2		139.1		93	187.4	49.9	600	579 6	155
	43.5	11.6	95	91.8	24 6	44	140.1	37-3	94	188.4	50.5	700	676.2	181
	Street Street	-	96	92.7	24.8		-	37-5	95	-			_	-
	44-4	11.9				:46	141 0	37.8	196	189.3	50.7	800	772 7 869.3	293
	45.4	12.4	97	93-7		47	142.0	30.0	97	190.3		900	965.9	358
		12.7	99	94.7	25.4	48	143 0	38.3	98	191.2		2000	1931.8	517
	47.3	12 9		96.6		49	143-9	38.8	99	192.2	51.8	3000	2897.7	776
	Dep.		_	Dep	Lat.	Dift	Dep.	Lit.	Dift	193-2 Dep.		Dift.	Dep.	Lat

		,				, ,	161	Degre	ees.					
Diff	Lat.	Dep.	-	-	Dep.		Lat.	Dep	Dif		Dep		Lat.	Dep.
1	01.0	00.3	51	49.0		101	1. 20						1	
2		00.6	52	50.0		02	3		1 3					331
3	03.8	01.1	54						53	0		11 4		
1:	04.8	01.4	55	52.9		05		28.0	54			0		56.5
1-6	-	01.7	56	53.8	15.4	106	_	29.2			-			
1 7	06 7	01.9	57.	54.8	15.7	07		29.5	57	150.9		1 07	199.0	
8	07.7	02.2	58	55.7	16.0			29.8	158	151.9	43.5	08		57.3
9	08.7	02.5	59 60	56.7		09				152.8	43.8	09		57.6
10	09.6	-	61	58.6		-	-	-	· II	-		10	-	31.3
11	10.6	03.0	62	59.6		111						211		
13	11.5	03.6	63	60.6	17.4	13				150.7		12		
14	13.5	03.9	64	61.5	17.6	14	109.6			157.6	45.2	14		59.0
15	14-4	04.1	65	62.5		15	110.5			1 48.6	45.5	15	2 /2	59.3
16	15.4	04.4	66	63.4	18.2	116	111.5	32.0	166	159.5	45.7	216	207.6	
17	16.3	04.7	67	64.4	13.5	17	112.5			160.5	46.0	17	208.6	59.8
18	17.3	05.0	68	65.4	18.7	18	113.4					18	209.5	60.1
19	18.3	05.2	69	66.3	19.0	19	114.4			162.4		19		60.4
20	19.2	05.5	70	68.2	19.6	-	115:3	33.1			46.9	20	211.4	60.6
21	20.2	05.8	71	69.2	19.8	121	116.3			164.4	47.1	221	212.4	60.9
22	22.1	06.3	73	70.2	20.1	23	117.3	33.6	72 73	166.3	47.4	22	213.4	61.2
24	23.1	06.6	74	71.1	30.4	24	119.2	34.2	74	167.2	48.0	23	215.3	61.5
25	24.0	06.9	75	72.1	20.7	25	120.1	34.4	75	168.2	48.2	25	216.3	62.0
26	25.0	07.2	76	73.0	20.9	126	121.1	34.7	176	169.2	48.5	226	217.2	62.3
17		07.4	77	74.0	21.2	27	122.1	35.0	77	170.1	48.8	27	218.2	62.6
28		07.7	78	75.0	21.5	28	123.0	35:3	78	171.1	49-1	28	219.1	62.8
29	27.9	08.0	79	75.9	21.8	29	124.0	35,6	79	172.0	49.3	29	220.1	63.1
30	_	08.7	80	76.0	22.0	30	124.9	35.8	80	173.0	49.6	30	221.1	63.4
31	24.8 30.8	08.5	81	77·9 78.8	22.3	32	125.9.	36.1	181 82	174.0	4949	231	222.0	63.7
33	31.7	09.1	83	79.8	22.9	33	126.9	36.4 36.7	83	174-9	50.2	32	223.0	63.9
34	32.7	09.4	84	80.7	23.1	34	128.8	36.9	84	176.8	50.7	33	223.9	64.2
35		09.6	85	81.7	23.4	35	129.8	37.2	85	177.8	51.0	35	225.9	64.8
35	34.6	09.9	86	82.7	23.7	136	13047	37.5	186	178.8	51.3	236	226.8	65.0
37	35.6	10.2	87.	83.6	24.0	37	131.7	37.8	87	179.7	51.5	37	227.8	65.3
38	36.5	10.5	88	84.6	24.3	38	132.6	38.0	.88	180-7	51.8	38	228.7	65.6
39	37.5	10.7	89	86.5	24.5	39	133.6	38.3	89	181.7	52.1	39	129.7	65.9
4141	200	11.0	90		24,8	40	134.6	-	90	1	52.4	40	230.7	66.1
42	39-4	11.3	91	87.5	25.1	141	135.5	38.9	191	183.6	52.6	300	288.4	82.7
		11.9	92		25.4		136.5	39.1	92	184.5	52.9	500	384·5 480.6	110.3
44	42.3	12.1	94	90.3	25.9	44		39-7	94	186.5	52.5	600	576.8	137.8
45	43-3	12.4		91.3	26.2	45	139.4		95	187.4	53.7	700	672.9	103.0
46	44.2	12 7	-	92.3	26.5	1 40		40.2	196	188.4	54.0	800	769.0	
47	45.2	12.0	97	93.2	26.7	47	141.3	40.5	97	189.3	54-3	900	865.1	248 1
43	40.1	13.2	98	94.2	27.0	48	142.2	40.8	98	190.3	54.6	1000	961.3	275.6
49	47-1	13.5	99	95.2	27.3	49	143.2	41.1	99	191-3	54.8	2000	1923.6	551.2
Dia	Den	3.8	100	96,1	27.0	150	144.2	41.3	200	192.2	55.1	3000	2883.9	826,8
-	48.1 Dep.	Lalle	DIE	Dep.I	Lat.	Ditt	Uep.	Lat.	DIE	Deb.	Lat.	Dift.	Dep.	Lat.
						2.70								

52.0 52.0 52.0 52.3 52.3 52.8 53.1 53.6 53.8 54.6 54.9 55.1 55.4 55.9 57.2 57.7 58.0 58.2 58.5 59.8 60.0

			4	THOR.		1	7 De	egree.	s.			1		-
Dift	Lat.	Dep	Dift	-	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
1	01.0	00.3	51	48.8	14.9	101	96.6	29.5	151	144.4	44.1	201	192.2	58
2	01.9	00.6	52	49.7	15.2	02	97.5	29.8	52	145.3	44.4	02	193.2	59-
3	02.9	00.9	53	50.7	15.5	03	98.5	30.1	53	146.3	44-7	03	194.1	59.
1 4	03.8	01.2	54	51,6	15.8	04	99.4	30.4	54	147.3	45.0	04	195.1	59-
5	_	01.5	55	52.6	16.1	05	100.4	30.7	55	148.2	45.3	05	1960	59.
6	05.7	01.8	56	53.5	16.4	106	101.4	31.0	156	149.2	45.6	206	197.0	60.
8	06.7	02.0	57	54.5	16.7	07	102.3	31.3	57	150.1	45.9	07	197.9	60.
	07.6	02.3	58	55.5	17.0	08	103.3	31.6	58	151.1	46.2	08	198.9	60.
10	09 6	02.0	59	57.4	17.2	10	104.2	31.9	59	152.0	46.5	09	199.9	61.
-		-	61	58.3	17.8	-	106.1	_	-	153.0	46.8	10	200.8	61.
11	11.5		62	59.3	18.1	111	1.00	32.4	161	154.0	47.1	211	201.8	61,
12		03.8	63	60.2	18.4	12	107.1	32.7	62	154 9	47.4	12	202.7	62.
14	13.4	04.1	64	61,2	18.7	14	109.0	33.3	64	155.9	47.6	13	203.7	62.
15	14.3	04.4	65	62.2	19.0	15	110.0	33.6	65	157.8	47 9 48.2	14	204.6	62.
16	15.3	04.7	66	63.1	19.3	116	110.9	33.9	166	158.7	48.5	15	205.6	62.
17	16.3	050	67	64.1	19.6	17	111.9	34.2	67		48.8	216	206.5	63.
18	17.2	05.3	68	65.0	19.9	18	112.8	34.5	68	159.7	49.1	17	207.5	63.
19	18.2	05.6	69	66.0	20.2	19	113.8	34.8	69	161.6	49.4	19	209.4	63.
20	19.1	05.8	70	66.9	20.5	20	114.7	35.1	70	162.6	49.7	20	2104	64.
21	20.1	06.1	71	67.9	20.8	121	115.7	35.4	171	163.5	50.0	-	211.3	
22	21.0	06.4	72	68.8	21.0	22	116.7	35.7	72	164.5	50.3	221	211.3	64.
23	22.0	06.7	73	69.8	21.3	23	117.6	36.0	73	165.4	50.6	23	213.2	65.
24	22.9	27.0	74	70.8	21.6	24	118.6	36.2	74	166.4	50.9	24	214.2	65.
25	23.9	07.3	75	71.7	21.9	25	119.5	36.5	75	167.3	51.2	25	215.2	65.
26	24.9	07.6	76	72.7	22.2	126	120.5	36.8	176	168.3	51.4	226	216.1	66
27	1 0	07.9	77	73.6	22.5	27	121.4	37.1	77	169.3	51.7	27	217.1	66
28	26.8	08.2	78	74.6	22.8	28	122.4	3744	78	170.2	52,0	28	218.0	66.
29	27.7		79	75.5		29	123.4	37.7	79	171.2	52.3	29	2190	66.
30	28.7	08.8	80	76.5	23.4	30	124.3	38.0	80	172.1	52.6	30	219.9	67.
31	29.6	09.1	81	77.5	23.7	131	125.3	38.3	181	173.1	52.9	231	220.9	67.
32	30.6	09.4	82	78.4	24.0	32	126.2	38.6	82	174.0	53.2	32	221,8	67
33	31.0	09.6	83	79-4		33	127.2		83	175.0	5245	- 33	222.8	68
34		09.9	84	80.3		34	128.1	39.2	84	175.9	53.8	34	223.8	68,
35		-	85	81.3	-	35	129.1	39.5	85	176.9	54.1	35	224.7	68
36			86	82.2	25.1	136	130.0	39.8	186	177.9	54.4	236	\$25.7	69
37	35.4		87	83.2	25.4	37	131.0	40.0	87	178.8	54.7	37	226.6	69
38			88	84.1	25.7	38	132.0		88	179.8	55.0	38	227.6	69
39			89	86.1	26.0	39	132.9	A COLUMN	89	180.7	55.2	39	228.5	69
40	-	-	90			40	133.9	40.9	90	181.7	55.5	40	220.5	70
41			91	87.0	1.6 -	141	134.8	41.2	191	182.6	55.8	300	286.9	87
42	43.1	12.3	92	88.0	27.2		135.0	41.5	92	183.6	50.1	400	382.5	117
43	42.1	12.9	93		27.5		136.7		93	184.6	56.7	500	573.8	170
45		13.2	95	90.8	27.8	45	138.7		94	186.5	57.0	700	669.4	
		13.4			28.1						1	-		0
47		13.7	97	02.8	28.4	47	139.6	142.7		187.4	57.3	900	765.0 860.7	
48		14.0	08	92.7	28.6	48			97	180.4	57.6		956.3	202
49		14.3	90	94.7	28.9	49		43.3	99		58-2	2000	1912.6	584
	47.8	14.6	100	95.6	29.2		143.4	42.8	200	191.2	58.5	3000	2868.9	877
		Lat.					Dep.			Dep.	Lat	Dift,		Lat

	1	Diff	eren	ice o	fL	atitu	ide d	ind	Dep	artu	ire.		187
					1	8 De	grees			- /			- /
Millat.	Dep. 1	Dift	Lat.	Dep.	Dift		Dep.	Dift		Dep.	Dift.	Lat.	Dep.
JO1.0	00.3	51	48.5	15.8	101	96.1	31.2	151	143.6	46.7	201	191.2	62.1
2 01.9	00.6	52	49.5	16.1	02	97.0	31.5	52	144.6	47.0	02	192.1	62.4
102.0	00.9	53	50.4	16.4	03	98.0	31.8	53	145.5	47.3	03	193.1	62.7
403 8	01.2	54	51.4	16.7	04	98.9	32.1	54	146.5	47.6	04	194.0	63.0
	01.5	55	52.3	17.0	05	99-9	32.4	55	147.4	47.9	90	195.0	63.3
	01.9	56	53.3	17.3	106	100.8	32.8	156	148.4	48.2	206	195.9	63.7
71/	02.2	57	54.2 55.2	17.9	97 08	102.7	33-4	57	149.3	48.8	07	196.9	64.0
1006	02.8	58	56.1	18.2	09	103.7	33.7	58 59	151.2	49.1	08	198.8	64.6
71 1	03.1	59 60	57.1	18.5	10	104.6	34.0	60	152.2	49-4	10	120.7	64.9
	03.4	61	58 0	18.8	111	105.6	34-3	161	153.1	49.7	211	200.7	65.2
12 11.4	03.7	62	59.0	19.2	12	106.5	34.6	62	154.1	50.1	12	201.6	65.5
11 12.4	04.0	63	59.9	19.5	13	107.5	34.9	63	155.0	50.4	13	202.6	65.8
1 2 2 2	04.3	64	60.9	19.8	14	108.4	35.2	64	156.0	50.7	14	203.5	66.1
15 14 3	04.6	65	8.19	20.1	15	109.4	35.5	65	156.9	51.0	15	204.5	66.4
	04.9	66	62.8	20.4	116	110.3	35.8	166	157.9	51.3	216	205.4	66.7
	05.3	67	63.7	20.7	17	111.3	36.2 36.5	67	158.8	51.6	17	206.4	07.1
1 4	05.6	68	65.6	21.3		112.2	36.8	68	160.7	51.9	18	207.3	67.4
77	05.9	69	66.6	21.6	19	114.1	37-1	69 70	161.7	52.5	19	209.2	67.7 68.0
	06.5	70	67.5	21.9	-	115.1	37.4		162.6	52.8	_		68.3
	06.8	71	68.5	22,2	121	116.0	37.7	171	163.6	53.1	221	210.2	68.6
2	07.1	72 73	69.4	22.6	23	117.0	38.0	72 73	164.5	52.5	23	212.1	68.9
24 22.8	07.4	74	70.4	22.9	24	117.9	38.3	74	165.5	53.8	24	213.0	69.2
	07.7	75	71.3	23.2	25	118.9	38.6	75	166.4	54.1	25	214.0	69.5
25 23.8 26 24.7	08.0	76	72.3	23.5	126	119.8	38.9	176	167.4	54-4	226	214.9	69.8
27 25.7	08.3	77	73 2	23.8	27	120.8	39.2	77 78	168.3	54-7	27	215.9	70 1
28 26,6	08.7	78	74.2	24.1	28	121.7	39.6	78	169.3	55.0	28	216.8	70.5
19 27.6	09.0	79	75.1 76.1	24.4	29	123.6	39.9	79	170.2	55.3	29	217.8	70.8
-	09.3	80	_	24.7	30		_	80	_	55.6	30	-	71.1
31 29-5	09.6	81	77.0	25.0	131	124.6	40.8	181	172.1	55.9 56.2	231	219.7	71.4
32 30-4 33 31-4	10.2	82	78.0	25.3	32	125.5	41.1	83	174.0	56.5	32	221.6	71.7
34 32.3	10.5	83	79.9	26.0	34	127.4	41.4	84	175.0	56.9	33	222.5	72.0
15 33-3	10.8	85	80.8	26.3	35	128.4	41.7	85	175.9	57.2	35	223.5	72.6
15 33·3 16 34·2	11.1	86	31.8	26.6	136	129.3	42.0	186	176.9	57.5	236	224.4	72.9
37 35.2	11.4	87	82.7	26.9	37	130.3	42.3	87	177.8	57.8	37	325.4	73.2
38 36.1	11.7	88	83.7	27.2	38	131.2	42.0	88	178.8	58.1	38	\$25.3	73-5
39 37-1	12.1	89	84.6	27.5	39	132.2	43.0	89	179.7	58.4	39	227.3	73.9
40 38.0	12.4	90	85.6	27.8	40	133.1	43.3	90	180.7	58.7	40	228.2	74 4
41 39.0	12.7	91	86.5	28.1		134 1	43.0	191	181.6	59.0	300	285.3	92.7
41 39.9	13.0	92	87.5	28,4	42	135.0	43.9	92	182.6	59.3	400	380 4	123.6
43 40.9	13.3	93	38.4	28.7	43	136.9	44.5	93	183.5	59.6	600	475.5	154.5
45 42.8	12.0	94	89.4	29.0	44	137.9	44.8	94	185.4	59.9	700	570.6	185.4
4 43 7	13.9	95	90.3	29.4	45 146	138.8	45.1	95	186.4	60.6	800	760.8	216.3
47 44-7	14.5	96	91.3	30.0	47	139.8	45.4	196	187.3	60.9	900	760.8 856.0	247.2
4 45.6	14.8	97 98	93.2	30.3	48	140.7	45.7	97 98	188.3	61.2	1000	951.1	309.0
49 46.6	14.1	99	94.1	30.6	49	142.7	46.0	99	189.2	61.5	2000	1902.2	618.0
9 47.6	15.5	100	95.1	30.9	150	142.7	46.4	200	190.2	61.8	3000 Dift.	2853.3	927.0
90 47.6 Dift Dep.	Lat.	Dift	Dep.		Dift	Dep.	Lat.	Din	Dep.	Lat.	Dift.	Dep.	Lac.
					-	_		-					-

						I	9 D	egree	5.	'				
Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dia.	Lat.	De
1	00.9	00.3	51	48.2	16.6	101	95.5	32.9	151	142.8	49.2	201	190.0	
2	01.9	00.7	52	49.2	16.9	02	96.4	33.2	52	143.7	49.5	02	191.0	6
3	02.8	01.0	53	50.1	17.3	03	97.4		53	144.7	49.8	03	191.9	
4	93.8	01.3	54	52.0	17.6	04	99.3	33.9	54	145.6	50.5	04	192.9	
6	_	02.0	56	52.9	18.2	-		_		_		05	193-8	
	05.7	02.3	57	53.9	18.6	106	100.2	34.8	156	147.5	50.8	206	194.8	
7 8		02.6	58	54 8	18.9	08	102.1		58	149.4	51.4	08	195.7	
	08.5	02.9	59	55.8	19.2	09	103.1	35.5	59	150.3	51.8	09	197.6	
10	09.5	03.3	60	56.7	19.5	10	104.0	35.8	60	151.3	52.1	10	198.5	6
11	10:4	03.6	61	57.7	19.9	111	104.9	36.1	161	152.2	52.4	211	199.5	
12	11.3	03.9	62		20,2	12	105.9	36.5	62	153.2	52.7	12	200.4	6
13	12.3	04.2	63	59.6	20.5	13	106.8	36.8	63		53.1	13	201.4	6
14	13.2	04.6	64	61.5	20.8	14	107.8	37.1	64		53.4	14	202.3	
15	14.2	04.9	65		21.2	15	108.7	37.4	65		53.7	15	203.3	2
16	15.1		66	63.3	21.5	116	109.7	37.8	166	156.9	54.0	216	204.2	
17	17.0	05.5		64.3	21.8	17	111.6	38.4	6 ₇	157.9	54 4	17	205.2	
19		06.2	69			10	112.5	38.7	69	159.8	54.7	19	207.1	
20	18.9	06.5	70	1 - 2	22.8	20	113.5	39.1	70	160.7	55.4	20	208.	1
21	19.9	06.8	71	67.1		121	114.4	39-4	171	161.7	55.7	221	208.9	7
22	20.8	07.2	72	68.1	23.4	22	115.3	39-7	72	162.6	56.0	22	209:3	1 7
23	21.7		73	69.0	23.8	23	116.3	40.0	73	163.6	56.3	23	210.8	
24	22.7	07.8	74		24.1	24	117.2	40.4	74	164.5	56.7	24	211.8	7
25	-	08.1	75		24.4	25	118.2	40.7	75	165.5	57.0	25	212.7	7
26	24.6	08.5	76			126	119.1	41.0	176	166.4	57.3	226	213.7	7
27	25.5		77	72.8		27	120.1	41.4	77	167.3	57.6	27	214.6	7
28	27.4	09.1	78	73.7	25.4	28	121.0	41.7	78	168.3		28	216.5	
30	28.4	09.8	80	75.6	26.0	30	122.9	42.3	79 80	170 2	58.6	30	217.5	7
	29.3	10.1	81	76.6	26.4		123.9	42.7	181	171.1	58.9		218.4	7
31		1		77.5	26.7	131	124.8		82		-	231 32	219.3	1 7
33	31.2	10.7	83	78.5	27.0	33	125.7	43.3	83			33	220.3	1 7
34	32.1		84	79.4		34	126.7	43.6	84	174.0	59.9	34	221.2	7
35	33.1	11,4	85	80.4		35	127.6	44.0	85	174 9	60.2	35	222.2	7
36	34.0		86	81.3	28.0	136	128.6	44-3	186		60.6	236	223.1	7
37	35.0	12.0	87	82.3	28.3	37	129-5	44.6	87		60.9	37	224.1	7
38	35.9	12.4	88			38	130.5	B	-88		61.5	38	225.0	7
39		13.0	90		29.0	39	131.4	45.6	89		61.9	39	226.9	1
40		13:3			29.6	40	-	_		180.6			283.7	9
		13,7	91	87.0	30.0		133.3			181.5		400	378.2	
43		14.0	93	87.9	30.3	42	135.2	46.6	93	182.5	62.8	500	472.8	16
44		14.3		88.9	30.6	44	136.1	46.9	94	183.4	63.2	600	567.3	19
45	120.25	14.7	95	89.8	30.9	45	337.1		95	184.4	63.5	700	661.9	22
46	ALC: UNITED STATES	15.0		90.8	31.3	146	138.0	47.5	196	185.3	63.8	800	756.4	26
47	44.4	15.3	97	91.7	31.6	47	119.0	47.9	97	186.3	64.1	900	851.0	
48	45.4		98	92.7		48	139.9	48.2	98	187.2	64.5	1000	945.5	
49	46.3	16.0			32.2	49	140.9	48.5	99		64.8	2000	2836.5	
50	47.3	16.3	100 D:0	94.5	32.6		141.8	40.0		189.1	65.1	Dift.		14
Jitt	Dep.	Lat.	Ditt	Dep.	Lat.	Ditt	Dep.	Lat	Ditt	Dep.	Lat.	Dill.	Dob.	1

6	11.	w			1000	910000	444		1		200		-
	3				2	o De	egree	s.				-	
Dif Lat.	Dep.	Diff	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
- 00.9	00.3	51	47.9	17.4	101	94-9	34-5	151	141.9	51.6	201	188.9	68.7
2 01.9	00.7	52	48.9	17.8	02	95.8	34-9	52	142.8	52.0	02	189.8	69.1
1 02.8	01.0	53	49.8	18.1	03	96.8	35.2	53	143.8	52.3	03	190.8	69.4
4 03.8	01.4	54	50.7	18.5	04	97.7	35.6	54	144.7	52.7	04	191.7	69.8
5 04.7	01.7	55	51.7	18.8	.05	98.7	35.9	55	145.7	53.0	05	192.6	70.1
6 05.6	02.1	56	52.6	19.2	106	99.6	36.3	156	146.6	53.4	206	193.6	70.5
7 06.6	02.4	57	53.6	19.5	07	100.5	36.6	57	147.5	53.7	07	194.5	70.8
8 07.5	02.7	58	54.5	19.8	08	101.5	36.9	58	148.5	54.0	08	195.5	71.1
9 08.5	03.1	59 60	55.4	20.2	09	102.4	37.3	59	149.4	54.4	,09	196.4	71.5
10 09-4	03:4		56.4	20.5	10	103.4	37.6	60	150.4	54.7	10	197-3	71.8
10 09-4	03.8	61	57.3	20.9	111	104.3	38.0	161	151.3	55.1	211	198.3	72.2
12 11.3	04.1	62	58.3	21.2	12	105.2	38.3	62	152.2	55.4	12	199.2	72.5
13 12.2	04.4	63	59.2	21.5	13	106.2	38.6	63	153.2	55.7	13	200.2	72.8
14 13.2	04.8	64	61.1	21.9	14	107.1	39.0	64	154.1	56.1	14	201.1	73.2
15 14.1 16 15.0	05.1	65	-	-	15	-	39-3	65	155.1	56.4	15	202.0	73.5
	95.5	66	62.0	22.0	116	109.0	39.7	166	156.0	56.8	216	203.0	73.9
17 16.0	05.8	67	63.0	22.9	17	109.9	40.0	67	156.9	57-1	17	203.9	74.2
18 16.9	06.2	68	63.9	23.3	14	110.9	40.4	68	157.9	57.5	18	204.9	74.6
19 17.9	06.5	69	65.8	23.6	19	111.8	40.7	69	158.8	57.8	19	205.8	74-9
11 19-7	06.8	70		239	20	112.8	41.0	70	159.7	58.1	20	206.7	75.2
21 19-7	07.2	71	06.7	24.3	121	113.7	41.4	171	160.7	58.5	221	207.7	75.6
22 20.7	07.5	72	68.6	24.6	22	114.6	41.7	72	161,6	58.8	22	208.6	75.9
23 21.6	97.9	73		25.0	23	115.6	42.1	73	162.6	59.2	23	209.6	76.3
24 22.6	08.2	74	70.5	25.3	24	116.5	42.4	74	163.5	59.5	24	210.5	76.6
25 23.5 26 24.4	08.6	75		25.7	25	117.5	42.8	75	164.4	59.9	25	211.4	77.0
	08.9	76	71.4	26.0	126	118.4	43.1	176	165.4	60.2	226	212.4	77.3
27 25.4	09.2	77	72.4	26.3	27	119.3	43.4	77	166.3	60.5	27	213.3	77.0
28 26.3	09.6	78	73.3	27.0	28	120.3	43.8	78	167.3	60.9		214.3	78.0
19 27.3 30 28.2	10.3	79 80	75.2	27.4	29	121.2	44.1	79 80	169.1	61.6	29	215.2	78.7
30 28.2	10.3		76.1	_	30	_		_		_	30	-	-
31 29.1	10.6	81		27.7	131	123.1	44.8	181 82	170.1	61.9	231	217.1	79.0
32 30.1	10.9	82 83	77.1	28.4	32	124.0	45-1	83	171.0	62.6	32		79.3
33 31.0		84	78.9	28.7	33	125.0	45.8	84	172.9	62.9	33	219.0	79.7
34 31.9 35 32.9		85	79.9	29.1	35	126 9	46.2	85	173.8	63.3	34	220.8	80.4
36 33.8		86	80.8		33	-	46.5	186	174.8	63.6		221.8	80.7
30 33.0		87	31.8	29.4	136	127.8	46.9	87	175.7	64.0	236	222.7	81.1
37 34.8 38 35.7		88	82.7	30.1	37	129.7	47.2	88	176.7	64.3	37 38	223.6	81.4
39 36.6	13.0	89	83.6	30.4	39	130.6	47.5	89	177.6		39.	224.6	81.7
40 37.6	13 7	90	84.6	30.8	40	131.6	47.9	90	178.5	65.0	40	225.5	82.1
41 38-5	3/	_	_		-	-	48.2	-	_			281.9	102.6
42 30-5	14.0		85.5	31.1	141	133.5		191	179.5	65.3	300		
42 40-4	14.4		87.4	31.5	42	133.4	48.0	92	181.4		500	375.9 469.9	136.8
44 41.3	14.7		88.3	32.1			49.2		182.3	66.3	600	563.8	205.2
45 42.3	15.4		89.3	32.5	44	135.3	49.6	94	183.2	66.7	700	657.8	239.4
46 42.0	15.4	95		32.8	45		-	-	184.2		800		
45 43.2 47 44.2	15.7		90.2		146	137.2	49-9	196	185.1	67.0		751.8	273.6
48 45.1	I TOOL		91.2	33.2	47	138.1	50.3	97	186.1	67.4	1000	939-7	307.8
49 46.0		98	93.0	33.5		139.1	50.6	98	187.0		2000	1879.4	684.0
50 47.0	17.1	99	94.0	33.9 34.2			51.3	200	187.9	68.4	3000	2819.1	1026.0
Dif Dep.	1		Dep.	Lat.	Dift	Den		Dift		Lat.	Dift.	Dep.	Lat.
lach.	Ladie	וועון	Deh.	Lat.	וווען	Dep.	Lat.	ווועון	Dep.	Dat.	Ditt.	Dep.	mat.
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Dep. 65.4 65.4 66.1 66.4 66.7 67.7 67.7 68.1 69.4 69.4 69.4 69.4 69.7 70.7 71.6 72.0 72.0 72.0 72.0 73.9 74.6 75.2 76.3 76.3 7

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1		1					21	Deg	ree.					7.49
Dia	Lat.	Dep.	Dif	Lat		: Di	A Lat.	Dep	Di	A Lat.	Dep	· Dift	. Lat.	Dep.
1			11 3	47.					15	1 141		-	1 187.6	72.0
2			11 3.	48.	5 18.6	0		3 36.6	1 5		54.5		188.6	22
3	1		11 33			11				142.	54.8		-0	72.8
4		1 1 1 10	11 37			11					55.2	0		73.1
_5	04.7		1 3		_	-11	-	-	1	144.	55.6	0	191.4	73.9
6		02 2	11 3-			11	99.			1450	55.9	200	192.3	73.8
7	06.5			53-2	20.4					146.6	100	07	1	74.2
			11 2		25.8				11 -			08		74.5
9	08.4			55.1		0		100	11 22			1 09		74.9
10	-		-	-		10	102.	1 37			57.3	1	190.0	75.3
31	1			13		111			161			211	197.0	
12	1		62			12			11	151.3	58.1	12		76.0
13			63	58.8	1	1 13	105.	40.5		152.2		13	- 0 0	76.2
14			64	60.7		14				153.1		14		76.7
-	-	-			-	15	-	-	65	_	59.1	15		77-
16		1 2 .	66			116			166	155.0	59.5	216	201.6	77-4
17	15.9		68		24.0	17			67	155-9	59.9	17		77.8
19	17.7	1 6 13	69	63.5	24.4	18			68	156.9		18	203.5	78.1
20	18.7	07.2		64.4		19		1 .	69	157.8		19	204.4	78.5
-	19.6		70	65.3		20	-	1-	70	158.7	60.9	30	205.4	78.8
21			71	66.3	25.4	121	113.0	1	171	159.7	61.3	221	206.3	79.2
22	20.5	08.2	72	68.1	25.8	22	1 00	1	72	160.6	61.6	22	207.2	796
23	21.5	08.6	73	69.1		23		1	73	161.5	62.0	23	208.2	799
25	23.3	09.0	75	700		24			74	162.5	62.4	24	209.1	80.3
26	24.3	-	-	-	-	-	-	-	75	163.4	62.7	25	210.0	80.6
27	25.2		76	70.9		126	117.7	45.2	176	164.3	63.1	226	211.0	81.0
28	26.1	10.0	78	71.9	28.0	28	119.5		77	165.3	63.4	27	211.9	81.4
29	27.1	10.4	79	73.7	28.3	29	120.5	45.9	78	166.2	63.8	28	212.8	-81.7
30	28.0	10.8	80	74.7		30	121.4	46.6	79 80	167.1 168 1	64.2	29	213.8	82.1
31	28.9	11.1	81	75.6	29.0		-	-			64.5	30	214.7	82.4
32	29.9	11.5	82	76.5		131	122.3	47.0	181	169.0	64.9	231	215.6	82.8
. 33	30.8	11.8	83	77.5	29.7	32	123.3	47.7	83	169.9	65.2	32	216.6	83.1
34	31.7	12.2.	84	78.4		34	125.1	48.0	84	171.8	65 6	33	217.5	83.5
35	32.7	12.5	85	79.3	30.5	35	126.1	48.4	85	172 7	65.9	34	218.4	83.9 84.2
36	33.6	12.9	86	80.3	30.8	136	127.0	-	186	-		35	_	
37	34.5		87	81.2	31.2	37	127.9	49.1	87	173.7	66.7	236	220.3	84.6
38	35.5	13.6	88	82.1	21.5	38	128.9	49.5	88	175.5	67.4	37	221.2	84.9
39	36.4	14.0	89	83.1	31.9	39	129.8	49.8	89	176.5	67.7	38	223.1	85.7
40	37.3	14.3	90	84.0	32.3	40	130.7	50.2	90		68.1	39 40	224.1	86.0
.41	38.3	14.7	91	84.9		141	131.7		191	178.3		300	280.1	107.1
42	39.2	15.1	92	84.9	33.0	42	132.6			179.3	68 8	400	10 Table 200	143.3
	40.1	15.4	93	86.8	33.3	43	133.5	51.3	93	180,2			01	179.2
	41.1	15.8	94	87.7	33.7	44	134.5		94	181.1	69.5	600	560.2	215.0
45	42.0		95	88.7	34.0	45	135.4	52.0	95	182.1	69.9	700	653.5	250.8
	42.9	16.5		89.6		146	136.3	52.3	196	183.0		800	746.9	280.7
	43.9	16.8	97	90.5	34.8	47	137.3		97	183.9	70.6	900	840.2	222.5
		17.2		91.5	35.1	48	138.2	53.0	98	184.9	71.0	1000	933 6	355.3
	45.7	17.6		92.4	35.5	49	139.1	53.4	99	185.8	71.3	2000	1867.2	710.0
_	_	17.9		93.4	35.8	150	140.1	53 8	200	186.7	71.7		2800.8	1074.9
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_	-	00.4	51	47.3	19.1	101	93.6	37.8	151	140.0	56.6	201	186.4	75-3
20	1.0	00.7	52	48.2	19.5	02	94.6	38.2	52	140.9	56.9	02	187.3	75.7 75.0
30		1.10	53	49.1	19.9	03	95.5	38.6	53	141.9	57 3	03	188.2	75.0
40	3.7	01.5	54	50.1	20.2	04	95.4	39.0	54	142.8	57.7	04	189.1	76.4
50	4.6	01.9	55	51.0	20.6	05	97.4	39.3	55	143.7	58.1	05	190.1	
60	5.0	02.2	56	51.9	21.0	106	98.3	39.7	156	144.6	58.4	206	191.0	77.2
70	6.5	02.6	57	52.9	21.4	07	99.2	40.1	57	145.6	58.8	07	191.9	77-5
	7.4	03.0	58	53.8	21.7	08	100 1	40.5	58	146.5	59.2	c8	192.9	77.9
- 71	08 3	03.4	59	54.7	22.1	09	101.1	40.8	59 60	147.4	59.6	10	193.8	78.7
10	09.3	03.7	60	55.6	-	10	102.0	41 2		_		-		
	10.2	04.1	61	56.6	22.9	111	102.9	41.6	161	149.3	60.3	211	195.6	79.0
77.	11.1	04.5	62	57.5	23.2	12	103.8	42.0	62	150.2	60.7	12		79-4
	12 1	04.9	63	58.4	23.6	13	104.8	42.3	63	152.1	61.4	13	197.5	79.8 80.2
10.1	13.0	05.2	64	59.3	24.0	14	105.7	43.1	65	153.0	61.8	15	199-3	80.5
-	13-9	05.6	65	6-	-	15	_	-	-	-	62.2	216		80.9
16	14.8	06.0				116	107.6	43.5	166	153.9	62.6	17	200.3	81.3
17	15.8	06.4	68	63.0	25.1	17	109.4	44.2	68	155.8	62.9	18	202.1	81.7
155	16.7	06.7	Hit e	64.0	25.8	19	110.3	44.6	69	156.7	63.3	19	203.1	82.0
19	17.6	07.1			26.2	20	111.3	45.0	70	157.6	63.7	20	204.0	82.4
20	-	100		-		-	-	45.3	11-	158.6	64.1	221-	204.9	82.8
21	19.5					121	112.2	45.7	72	159.5	64.4	22	205.8	83.2
	20.4					23	114.0	46.1	73	160.4	64.8	23	206.7	83.5
23	21,3				27.7	24	115.0	46.5	74	161.3	65.2	24	207.7	87.91
24	23.2					25	115.9	46.8	75	162.3	65.5	25	208.6	84.3
25 26			1			126	116.8	47.2	176	163.2	65.9	226	209.5	84.7
	24.1			71.4			117.8	47.6	77	164.1	66.3	27	210.5	85.0
27 28	26.0			72.		27	118.7	47.9	78	165.0	66.7	28	211.4	85.4
29		10.9				29	119.6	48.3	79	166.0	67.1	29	212.3	35.8
10	27.0			74.		30	120.5		80	166.9	67.4	30	213.3	86.2
30	28.7				_	131	121.5		181	167.8	67.8	231	214.2	86.5
3,	20.	12.0	-		30.7	32	122.4		82	168.8	68.2	32	215.1	86.9
11	10,	12.4		77-		33	123.3		83	169.7	68.6	33	216.0	87.3
34	29. 30. 31.	12.7		77-	31.5	34	124.2	50.2	84	170.6	68.9	34	217.0	87.7
35	32.	13.1		78.	31.8	35	125.2	50.6	85	171.5	69.3	35	217.9	88.0
35 to 17 to	33-				_	136	126.1		186	172.5	69.7	236	218.8	88.4
37	34.		n -			37	127 0		87	173.4	70.1	37	219.7	\$8.8
38	35.					38	128.0		88	174-3	70.4	38	220.7	89.2
39	36.	2 14.6	- 110	11 2 . 1	5 33-3	39	128.9		89	175.2	70.8	39	2216	89.5
39 49 41	37	1 15.0				40	129:8			176.2	71.2	40	222.5	\$9.9
41	38.		-11 -	-		141	130.7	52.8	191	177.1	71.5	300	278.2	112.4
42	38.			10	3 34.5	42	131.7	53.2	92	178.0		400	370.9	148.9
43	1 39.	9 16.	1 0	2 86.	2134.8	1 43	132.6	53.6	93	178.9	72.3	500	463.6	148.9 187.3 224.8
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	42.	7 17.	2 9	6 89.	36.0	146	135.4	54.7	1196	181.7	73.4	800		299.7
4	2 43.	6 17.	6 9	7 89.	9 30.3	1 47	136.3	55.1	97	182.7	73.8		834-5	337-2
		5 18.0	9	8 90.	9 36.7	48	137.2	55.4	98	183 6		1000		
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	76	70.0	29.7	126	116.0	49.2		162,0	68.8		-	
10.5	77	70.9	30.1		116.	49.6	77	162.9	69.2	226		8
10.9	78	71.8	30.5	28	117.8			163.8	69.5	27	209.0	1 8
11.3	79	72.7	30.9	29	118.7	50.4	79	164.8	69.9	29	210.8	2
11.7	80	73.6	31.3	30	119.7		80	165.7	70.3	30	211.7	100
12.1	81	74.6	31.6	131	120.6		181	166.6	70.7	-	212.6	
12.5	82	75.5	32.0	32	121.5			167.5	71.1	32	213.6	
12.9	83	76.4	32.4	33	122.4		83	168.5	71.5			
13.3	84	77.3	1000	34	123.3		84	169.4	71.9	33	214.5	
13.7		78.2	33.2	35	124.3	52.7	85	170.3	72.3		216.3	91
14.1			33.6		-	-	186	171.2	-		_	91
14.5		4 7 7		37	1901			172.1				91
		40000		38			88	173.1			100 000 000	93
15.2				39		54.3	89	174.0			220.0	91
				40				174.9			220.9	9
	91	83.8	35.6	141	129.8	55.1	101	175.8	74.6	200		117
16.4	92	84.7	35.9	42			92	176.7	75.0	400	368.2	15
	93	85.6	36.3		131.6	55.9	93	477-71	75.4	500	460.1	199
17.2	94	50.5		44	132.6	56.3	94	178.6	75.8	600		234
	95		-		133-5	56.7			76.2	700		273
18.0	96 8	8.4			1344	57.0						311
18.4	97 8	9.3	37.9	47	135.2	57.4	97	181.3	77.0		828.5	35
- C - C - C - C - C - C - C - C - C - C	98 9	0,2	38.3	48	136.2	57.8	08	182.3			920.5	199
				49	137.2	58.2	99	183.2	77.7		1841.0	78
9.1	100 9			150	1 38.1	58.6	200	184.1	78.1		2761.5	1175
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	14.1 14.5 14.8 15.2 15.6 16.0 16.4 16.8 17.2 17.6 18.0 18.4 18.8 9.1	14.1 86 14.5 87 14.8 88 15.2 89 15.6 90 16.0 91 16.4 92 16.8 93 17.2 94 17.6 95 18.0 96 18.4 97 18.8 98 19.1 99 19.5 100 96	14.1 86 79.2 14.5 87 80.1 14.8 88 81.0 15.2 89 81.9 15.6 90 82.8 16.0 91 83.8 16.4 92 84.7 16.8 93 85.6 17.2 94 86.5 17.6 95 87.4 18.0 96 88.4 18.4 97 89.3 18.8 98 90.2 19.1 99 91.1 19.5 100 92.0	14.1 86 79.2 33.0 14.5 87 80.1 34.0 14.8 88 81.0 34.4 15.2 89 81.9 34.8 35.2 16.0 91 82.8 35.6 16.4 92 84.7 35.9 16.8 93 85.6 36.3 17.2 94 86.5 36.7 17.6 95 87.4 37.1 18.0 96 88.4 37.5 18.4 97 89.3 37.9 8.8 98 90.2 38.3 99.1 99.5 100 92.0 39.1	14.1 86 79.2 33.0 136 14.5 87 80.1 34.0 37 14.8 88 81.0 34.4 38 15.2 89 81.9 34.8 39 15.6 90 82.8 35.2 40 16.0 91 83.8 35.6 141 16.4 92 84.7 35.9 42 16.8 93 85.6 36.3 43 17.2 94 86.5 36.7 44 17.6 95 87.4 37.1 45 18.0 96 88.4 37.5 146 18.4 97 89.3 37.9 47 8.8 98 90.2 38.3 48 9.1 99 91.1 38.7 49 9.5 100 92.0 39.1 150	14.1 86 79.2 33.6 136 125,2 14.8 88 81.0 34.4 38 127.0 15.2 89 81.9 34.8 39 127.9 15.6 90 82.8 35.2 40 128.9 16.0 91 83.8 35.6 141 129.8 16.4 92 84.7 35.9 42 130.7 16.8 93 85.6 36.3 43 131.6 17.2 94 86.5 36.7 44 132.6 17.6 95 87.4 37.1 45 133.5 18.0 96 88.4 37.5 146 134.4 18.4 97 89.3 37.9 47 135.3 18.4 97 89.3 37.9 47 135.3 18.9 90.2 38.3 48 436.2 19.1 199 91.1 38.7 49 137.2 19.5 100 92.0 39.1 150 138.1	14.1 86 79.2 33.0 136 125.2 53.1 14.5 87 80.1 34.0 37 126.1 53.5 14.8 88 81.0 34.4 38 127.0 53.9 15.2 89 81.9 34.8 39 127.0 53.9 15.6 90 82.8 35.2 40 128.9 54.3 16.0 91 83.8 35.6 141 129.8 55.1 16.8 93 85.6 36.3 43 131.6 55.9 17.2 94 86.5 36.7 44 132.6 56.3 17.6 95 87.4 37.1 45 133.5 56.7 18.0 96 88.4 37.5 146 134.4 57.0 18.4 97 89.3 37.9 47 135.3 57.4 8.8 98 90.2 38.3 48 136.2 57.8 9.1 99 91.1 38.7 49 137.2 58.2 9.5 100 92.0 39.1 150 198.1 58.6	14.1 86 79.2 33.0 136 125,2 53.1 186 14.5 87 80.1 34.0 37 126.1 53.5 87 14.8 88 81.0 34.4 38 127.0 53.5 88 15.2 89 81.9 34.8 39 127.9 54.3 89 15.6 90 82.8 35.2 40 128.9 54.7 90 16.0 91 83.8 35.6 141 129.8 55.1 191 16.4 92 84.7 35.9 42 130.7 55.5 92 16.8 93 85.6 36.3 43 131.6 55.9 93 17.2 94 86.5 36.7 44 132.6 56.3 94 17.6 95 87.4 37.1 45 133.5 56.7 95 18.0 96 88.4 37.5 146 134.4 57.0 196 18.4 97 89.3 37.9 47 135.3 57.4 97 8.8 98 90.2 38.3 48 136.2 57.8 98 9.1 100 </td <td>14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 15.2 89 81.9 34.8 39 127.0 53.9 89 174.0 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 17.2 94 86.5 36.7 44 132.6 56.3 94 178.6 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 8.9 90.2 38.3 48 136.2 57.8 98 <t< td=""><td>14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 75.4 17.2 94 86.5 36.7 44 132.6 56.3 94 178.6 75.8 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 18.0 96 88.4 37.5 146 134.4 57.0</td><td>14.1 86 79.2 33.0 136 125,2 53.1 186 171.2 72.7 236 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 14.8 88 81.0 34.4 38 127.0 53.5 88 173.1 37 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 39 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 400 17.2 94 86.5 36.7 44 132.6 55.9 93 177.7 75.4 600 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 700 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 <</td><td>14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 236 217.2 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 218.2 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 38 219.1 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 220.0 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 276.2 16.8 93 85.6 36.3 43 131.6 55.9 92 176.7 75.0 400 368.2 17.2 94 86.5 36.7 44 132.6 56.3 93 177.7 75.4 500 460.1 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 70.6 644.4 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 800 736.4 </td></t<></td>	14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 15.2 89 81.9 34.8 39 127.0 53.9 89 174.0 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 17.2 94 86.5 36.7 44 132.6 56.3 94 178.6 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 8.9 90.2 38.3 48 136.2 57.8 98 <t< td=""><td>14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 75.4 17.2 94 86.5 36.7 44 132.6 56.3 94 178.6 75.8 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 18.0 96 88.4 37.5 146 134.4 57.0</td><td>14.1 86 79.2 33.0 136 125,2 53.1 186 171.2 72.7 236 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 14.8 88 81.0 34.4 38 127.0 53.5 88 173.1 37 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 39 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 400 17.2 94 86.5 36.7 44 132.6 55.9 93 177.7 75.4 600 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 700 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 <</td><td>14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 236 217.2 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 218.2 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 38 219.1 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 220.0 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 276.2 16.8 93 85.6 36.3 43 131.6 55.9 92 176.7 75.0 400 368.2 17.2 94 86.5 36.7 44 132.6 56.3 93 177.7 75.4 500 460.1 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 70.6 644.4 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 800 736.4 </td></t<>	14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 16.8 93 85.6 36.3 43 131.6 55.9 93 177.7 75.4 17.2 94 86.5 36.7 44 132.6 56.3 94 178.6 75.8 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 18.0 96 88.4 37.5 146 134.4 57.0	14.1 86 79.2 33.0 136 125,2 53.1 186 171.2 72.7 236 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 14.8 88 81.0 34.4 38 127.0 53.5 88 173.1 37 15.2 89 81.9 34.8 39 127.9 54.3 89 174.0 73.8 39 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 16.4 92 84.7 35.9 42 130.7 55.5 92 176.7 75.0 400 17.2 94 86.5 36.7 44 132.6 55.9 93 177.7 75.4 600 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 700 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 <	14.1 86 79.2 33.0 136 125.2 53.1 186 171.2 72.7 236 217.2 14.5 87 80.1 34.0 37 126.1 53.5 87 172.1 73.1 37 218.2 14.8 88 81.0 34.4 38 127.0 53.9 88 173.1 73.5 38 219.1 15.6 90 82.8 35.2 40 128.9 54.7 90 174.9 74.2 40 220.0 16.0 91 83.8 35.6 141 129.8 55.1 191 175.8 74.6 300 276.2 16.8 93 85.6 36.3 43 131.6 55.9 92 176.7 75.0 400 368.2 17.2 94 86.5 36.7 44 132.6 56.3 93 177.7 75.4 500 460.1 17.6 95 87.4 37.1 45 133.5 56.7 95 179.5 76.2 70.6 644.4 18.0 96 88.4 37.5 146 134.4 57.0 196 180.4 76.6 800 736.4

24	Degrees	•
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	1				2	24 D	egree	5.					
100	Dep.	Dift	to the settlement	Dep.	Dift	-	Dep.	Dift	_		DiA.		Dep.
100.9	00.4	51	46.6	20.7	101	92.3	41.1	151	137.9	61.4	201	183.6	81.7
201.8	00.8	52	47.5	21.1	02		41.5	52	138.9	61.8	02	184.5	82.2
3 02.7	01.2	53	48.4	21.6	03	94-1	41.9	53	139.8	62.6	03	185.4	82.6
4 03.7 5 04.6	02.0	54	50.2	22.4	05	95.9	42.7	54 55	141.6	63.0	04	187.3	83.0
	02.4	56	51.2	22.8	106	96.8	43.1	156				188.2	83.4
6 05.5	02.8	57	52.1	23.2	07	97.7		57	142.5	63.4	206	189.1	83.8 84.2
7 06.4 8 07.3	03.3	58	53.0	23.6	08	98.7	43.9	58	144.3	64.3	08	190.0	84.6
000.2	c3.7	59	53.9	24.0	09	99.6	44.3		145.2	64.7	09	190.9	85.0
10 09.1	04.1	59 60	54.8	24.4	10	100.5	44-7	59 60	146.2	65.1	10	1918	85.4
11 10.0	04.5	61	55.7	24.8	111	101.4		161	147.1	65.5	211	192.7	85.8
11 11.0	04.9	62	56.6	25.2	12	102.3	45.6	62	148.0	65.0	12	193.7	86.2
13 11.9	05.3	63	57.6	25.6	13	103.2	46.0	63	148.9	66.3	13	194.6	86.6
14 12.8	05.7	64	58.5	26.0	14	104-1	46.4	64	149.8	66.7	14	195.5	87.0
11 11.0 13 11.9 14 12.8 15 13.7 16 14 6 17 15.5 18 16.4	06.1	65	59.4	26.4	15	105.1	_		150.7	67.1	15	196.4	87 4
16 14 0	06.5	66	60.3	26.8	116	106.0	47.2	166	151.6	67.5	216	197.3	87.8
17 15.5	06.9	67	61.2	27.2	18	106.9	47.6	63	152.6	67.9	17	198.2	88.3
18 10.4	07.7	69	63.0	28.1	19	108.7	48.4	69	154.4	68.7	18	199.1	88.7
19 18 3	08.1	70	63.9	28.5	20	109.6	48.8	70	155.3	69.1	19	200 1	89.1
19 17.4 10 18 3 11 19.2	-0	71	64.9	28.9	121	110.5	49.2	171	156.2	69.5	20	-	89.5
10.1	08.9	72	65.8	29.3	22	111.4	49.6	72	157.1	70.0	221	201.9	89.9
11 21.0	09.4	73	66.7	29.7	23	112.4	50.0	73	158.0	70.4	23	203.7	90.3
14 21.9	09.8	74	67.6	30.1	24	113.3	50.4	74	158.9	70.8	24	204.6	91.1
25 22.8	10.2	75	68.5	30.5	25	114.2	50.8	75	159.9	71.2	25	205.5	91.5
11 19.2 12 10.1 13 21.0 14 21.9 15 22.8 16 23.8 17 24.7	10.6	76	69.4	30-9	126	115.1	51.2	176	160.8	71.6	226	206 5	9149
27 24.7	11.0	77	70.3	31.3	27	116.0	51.7	77	161.7	72.0	27	207.4	92.3
28 25.6	11.4	78	71.3	31.7	28	116.9	52.1	78	162.6	72.4	. 28	208.3	92.7
29 20.5	11.8	79	72.2	32.1	29	117.8	52.5	79	163.5	72 8	29	209.2	93.2
28 25.6 29 26.5 20 27:4 11 28.3	12.2	80	73.1	32.5	30	118.8	52.9	80	164.4	73.2	30	210.2	91.5
12 28.3	12.6	81	74.0	32.9	131	119.7	53.3	181,	165.3	73.6	231	211.0	93-9
p 29-2	13.0	82	74-9 75 8	33.3	32	120.6	53.7	82	166.3	74.0	32	211.9	94 4
33 30.1	13.4	83	76.7	33.8	33	121.5	54.5	83	168.1	74.4	33	212.8	94.8
16 32.0	14.2	85	77.6	34.6	34	123.3	54 9	85	169.0	75.2	34	213.8	95.2
34 31.1 35 32.0 36 32.9 37 33.8	14.6	86	78.6		136	124.2	55-3	186	169.9	75.6			95.6
17 12.8	15.0	87	79.5	35.0	37	125.1	55.7	87	170.8	76.1	236	215.6	96.0
38 34-7	15.5	88	80.4	35.8	38	126.1	56.1	88	171.7	76 5	37	217.4	96.4 96.8
39135.0	15.9	89	31:3	36.2	39	127.0	56.5	89	172.7	76.9	39	218.3	97.2
\$ 36.5	16.3	90	82.2	36.6	40	127.9	56.9	90	173.6	77-3	40	219.2	97.6
42 37-5	16.7	91	83.1	37.0	141	128.8	57-3	101	174.5		-	274.1	
4 38.4	17-1	92	84.0	37.4	42	129.7	57.8	92	175.4	77.7	400	2654	162.7
47 39-3	17.5	93	85.0	27.8	43	130.6	58.2	02	176.3	78.5	500	365 4 456.8	203.4
4 40.2	17.9	94	85.9	28.2	44	131.5	58.0	94	177.2	78.9	600	548.1	244.0
# 40.2 45 41.1 46 42.0	18.3	95	86.8	38.6	45	132.5	59.0	05	178.1	79.3	700	639.5	284.7
4 42.0		96	87.7	39.0	146	133.4	59.4	196	179 0	79.7	800	730.8	325.4
47 43.9	19.1	97	38.6	39 4	47	134 3	59.8	97	180.0	80.1	900	822.2	366.1
43 8 49 44.8	19.5	98	89.5	39.9	48	135.2	60.2		180.9	80.5	1000	913.6	406.7
50 45.7	19.9	100		40.3		136.1	60.6		181.8	80.9		1827.2	813.4
90 45.7 Dep.	Lat		91.4	40.7	150	137.0		200			3000	2740.8	1220.1
and.	Inat.	[DIII]	Dep.	Lat.	Diff	D:p.	Lat	ואוטן	Dep	Lat.	Till	Dep.	Laste
							- 1				-		

74		<u> </u>		117	J -				201				
						25 1	_	ees.				1.	
Dift Lat	· Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	-	Dep.	Dift.	Lat.	1 De
1 00.		51	46.2	200	101	91.5	42.7	151	136.9	63.8	201	182.2	- 84
	8 00.8	52	47.1	22.0	02		43,1	52		64.2	02	182.1	8
3 02.		53	1 6	22.4	03		43.5	53	138.7			184.0	83
4 03		54		22.8	04	94-3	44.0	54	139.6		04	184.9	86
5 04		11 33			05	95.2	44.4	55	140.5	-			
7 06		11 3		23.7	106	96.1	44.8	156	141.4	65.9	II		
	.3 03.0		51.7	24.5	08		45.2	57	142.3	66.8	07		87
	2, 03.8	59		24.9	00		146.1	59		167.2			87
10 09	7 A TO 1		54.4	25.4	10	99.7	1 0	60	145 0		10		88
11 10	_	-	55.3	25.8	in	_		161	145 9	68.0	211	_	
12 10	.9 05.0	62	56.2	26.2	12	101.5		62	146.8	68.5	12		
13 11	.8 05.5	63	57.1	26.6	13	102.4	47.8	63	147.7	68 9	13		
14 12	.7 05.9	64	58,0	27.0	14	103.3	48.2	64	148.6	69.3	14		90
15 13	.6 06.3	65	58.9	27.5	15	104.2	48.6	65	149.5	69.7	15		
16 14		66	59.8	27.9	116			166	150.4		216	195.8	91
17 15	4 07.2		60.7	28.3	17	106.0	49.4	67	151.4	70.6	17	196.7	91
0.000	.3 07.6			28.7	18		1	68	152.3		18	197.6	92
	.2 08.0	69		29.2	19			69	153.2		19		92
		_	-	29.6	20	_	-	70	154-1	-	-30	-	-
21 19				30.0	121		51.1	171	155.0		221		
22 19				30.4	22		-	72	155.9	72.7	22	201.2	93
23 20	.8 09.7	73	10	30.8	23			73 74	156.8		23		
25 22				31.7	24			74 75	157.7	73.5	24		
26 23		-		32.1	126			176	_				
	.5 11.4		60.8	32.5	27			77	159.5		226	204.8	
	4 11.8		70.7		28	116.0	54.1	78	161.3	75.2	27		
	.3 12.3	79	71.6	22.4	29			79	162.2	75.6	29		
30 27	.2 12.7	80	72.5	33.8	30	117.8	54.9	80	163.1	76.1	30	208.4	
31 28		81	73.4	34.2	131	118.7	55.4	181	164.0		231	209.4	97
32 29	0 13.5	82	74.3	34-7	32	119.6	55.8	82	164.9	76.9	32	210.3	98
33 29	9 13 9	83	75.2	35.1	33	120.5	56.2	83	165.9	77-3	33	211.2	98
34 30	.8 14.4		10.00	35.5	34	121.4	56.6	84	166.8	77.8	34	212.1	
	.7 14.8	1	-		35		57.1	85	167.7		35	213.0	_
36 32			77.9	36.3	136	123.3		186	168.6		236	213.9	
37 33	1 15.6	87			37	124.2	57.9	87 88	169.5	79.0	37	214 8	100
	4 16.1	88	79.8	37.2	38	125.1	58.3	88	170.4		38	215.7	101
39 35	3 16.9	90	81.6	37.0	39 40	1000	59.2	90	171.3		39	217.5	101
	.2 17.3		82.5		141				173.1		40	_	-
42 37	1 17.7	02	82.5	38.9	141	127.8	60.0	191	174.0	81.1	300	362.5	
43 39	0 18.2	11 931	84.2	39.3	43	129.6	60.4	02	174.0	181.6	1 500	453.2	1 211
44 39	.9 18.6	94	85.2	39.7	44	130. 5	60.9	94	175.8	82.0	600	543.8	253
45 40	\$ 19.0	95	36.1	40.1	45	131.4	61.3	95	176 7	82.4	700	634.4	205
46 41	7 19.4	96	87.0	40.6	146	132.3	61.7	196	177.6	82.8	800	725.1	3-38
47 42.	6 19.9	97	87.9	41.0	47	133.2	62.1	97	178.5	83.3	900	815.7	380
48 43.	5 20.3	98	38.8	414	48	134.1	62.5	98	179.4	83.7	1000	906.3	422
40 44.	4 20.7	99	80.7	AT. 8	49	135.0	63.0	99	180.4	84.1	2000	1812.6	84
57 45	3 21.1	100	90.6	42.3	150	135.9	63.4	200	181.3	84.5	3000	27189	1207
Dist Deg	Lat.	Dia	Dep	Lit.		Dep.	Lat.		Dep.	Lat.	Dift.	Dep.	La

		Di	Uer	ence	9 .	Luii	uuc	uni	, De	Pur	41 6		195
					. 2	26 D	egree	5.	11				
M Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift.	Lat.	Dep.
00 9	00.4	51	45.8	22.4	101	90.8	44-3	151	135.7	66.2	201	180.7	88.1
1 01.8	00.9	52	46.7	22.8	02	91.7	44-7	52	136.6	66.6	02	181.6	88.6
03.7	01.3	53	47.6	23.2	03	92.6	45.2	53	137.5	67.1	03	182.5	89.0
103.6	01.8	54	48.5	23.7	04	93.5	45.6	54	138.4	67.5	04	183.4	89.4
05.4 06.3	03.2	<u>55</u> 56	50.3	24.1	106	94.4	46.0	55	139-3	68.0	05	184.3	89 9.
6 05-4	02.6	56	50.3	24.6		95.3	46.5	156	140.2	68.4	206	185.2	90.3
9 06.3 8 07.2 9 08.1	03.1	57	51.2	25.0	97	96.2	46.9	57	141.1	68.8	07	186.1	90.7
8 07.2	03.5	58	52.1	25.4	08	97-1	47.8	58	142.9	69.3	. 00	187.8	91.2
9 08.1	03.9	60	53.9	25.9 26.3	10	98.9	48.2	59	143.8	70.1	10	188.7	92.1
10 -7		59 60 61	54.8	26.7	-	99.8	48.7	161	144.7	70.6	211	189.0	
11 09.9	05.3	62	55.7	27.2	111	300.7	49.1	62	145.6	71.0	12	190.5	92.5
1 10.8	05.7	63	56.6	27.6	13	101.6	49.5	63	146.5	71.5	13	191.4	93.4
1 12,6	06.1	04	57.5	28.1	14	102.5	50.0	64	147.4	71.9	14	192.3	93.8
17 13.4	06.6	65	58-4		15	103.4	50.4	65	148.3	72.3	15	193.2	94-3
15 13.5 16 14.4	07.0	66	59-3	28.9	116	104.3	50.9	166	149.2	72.8	216	194.1	94.7
19 15.1	07.5	67	60.2	139.4	17	105.2	51.3	67	150.1	73.2	17	195.0	95.1
11 09.9 12 10.8 13 11.7 14 12.6 15 13.5 16 14.4 17 15.5 18 16.2	37.9	68	61.1	29.8	18	106.1	51.7	68	151.0	73.7	18	195.9	95.6
19 17.0	08.3	69	62.0		19	107.0	52.2	69	151.9	74.1	19	196.8	960
		70	62.9	-	20	107.9	52.6	70	152.8	74.5	20	197.7	96.4
11 18.	09.2	71	63.8	31.1	121	108,8	53.0	171	153.7	75.0	221	198.6	96.9
12 19.1	09.6	72	64.7	31.6	22	109.7	53.5	72	154.6	75.4	22	199.5	97.3
13 20.	10.1	73	65.6	32.0	23	110.6	53.9	73	155 5	75.8	23	200.4	97.8
24 21.	10.5	74	66.5		24	111.5	54.8	74	156.4	76.3	24	201 3	98.2
13 20. 24 11. 25 22. 26 23.	11.0	75	67.4		25	112.4			157.3	-	25	_	2
	4 11.4	76	68.3		126	113.2	55.2	176	1 58.2	77.2		203.1	99.1
27 24.	11.8	77 78	70.1	34.2	27	115.0	55.7	77 78	159.1	78.0	28	204.0	99.5
28 25.	1 12.7	79	71.0		29	115.9	56.6	79	160.9	78.5	29	205.8	100.4
39 26. 30 27. 31 27. 32 28. 33 29.	13.2	80	71.9		30	116.8	57.0	80	161.8	78.9	30	206.7	100.8
2 22	13.6		72.8		131	117.7	57.4	181	162.7	79.4	231	207.6	101.3
12 28	8 14.0	82	73-7		32	118.6	57.9		163.6	79.8	32	208.5	101.7
3 29.	14.5	83	74.6		33	119.5	58.3	82	164.5	80.2	33	209.4	102.1
34 30.	6 14.9	84	75.5	36,8	34	120.4	58.7	84	165.4	80.7	34	210.3	102.6
14 30. 15 31.	5 15.3	85	76.4	37.3	35	121.3	59.2	85	166.3	81.1	35	211.2	103.0
36 32.	4 15.8	86	77.3	37.7	35 136	122.2	59.6	186	167.2	81.5	236	212.1	103.5
37 33-	3 16.2	87	78.2	38.1	37	123.1	60.1		168'1	82.0	37	213.0	103.9
38 34·	2 16.7	88	79.1	38.6	38	124.0	60.5	88	169 0	82.4	38	213.9	104.3
19 35	1 17 1	89	80.0	39.0	39	124.9	60.9		169,9	82.9	-39	214.8	104.8
# 36. # 36.	9 18.0	91	80,9	39-5	40	125.8	61.4	90	170,8	83.3	300	215.7	105.2
# 30.	9 18.0	91	81.8	39.9	141	126.7	61.8	191	171.7	83.7		269.6	131.5
學 37.	7113.4			40.3		127.6	62.3		172.0	04.2	400	359-5	175.3
43 30	6 18,9	93	\$3.0	40.8	43	128.5	62.7	93	173.5	85.0	500	449·4 539·3	263.0
45 40	5 19.3 4 19.7 3 20.2	94	84.5	41.6	44	130.3	63.6		175.3		700	629.2	306.9
40 41	1 300	95			-			95	176.2		800	719.0	
67 42	2 20.6	96	86.3	42.1		131.2	64.4	196	170.2		900	808.0	35° 7 394-5
4 42	1 21.0	97		42,5	47	133.0		97	178.0	86.8		898.8	438.4
19 44	0 21.5	99		43.4	49		65.3	99	178.9	87.2	2000	1797.6	876.8
50 44	2 20,6 1 21.0 0 21.5 9 21.9 D. Lat.	100	89.9	43.8	150	133.9 134.8	65.8	200	179.8	87.7	3000	2696 4	1315.2
M De	p. Lat.	Dift	Dep.	Lat.	Dia	Dep.	Lat.	Dift		Lat.	Dift.	Dep.	Lat.
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		_			1		27	Dog.		•	,				
iii	Lat.	De		-		Dep.	Dut	Lat.	Dep.	Dit	Lat.	Dep.	Dift.	Lat.	Dep
	00.9	00			45.4	33 2	101		45.9	151	134-5	68.6	201	179.1	91
2	01.8	00	- 1	_	46.3	23.6	02	90.9	46.8	52	135.4	69.0	02	180.0	91
3	02.7	01	4 11		47.2	24.1	03	70		. 53	136.3	69.5	03	180.9	92
4	03.6	01			49.0	25.0	04		47.7	54	137.2	70.4	04	181.8	9
6	-	02			49.9		106	-	48.1	55	-		05	182.7	9
	05.3	1000	1.2	57	50.8	25.4	07	94.4	48.6	156	139.0	70.8	206	183.5	9
7	07.1		.6	58	51.7	26.3	08	96.2	49.0	57 58	140.8	71.7	07	184.4	94
9	08.0	04		59	52.6	26.8	cg	97.1	49.5		141.7	72.2	09	186.2	94
10	08.9	04	-5	60	53.5	27.2	10	98.0	49.9	59	142.6	72.6	10	187.1	9
11	09.8	05	5.0	61	54.4	37.7	111	98.9	50.4	161	143.5	73.1	211	188.0	
12	10.7		5.4	62	55.2	28.1	. 12	99.8	50.8	62	144.3	73.5	12	188.9	9
13	11.6		5.9	63	56.1	28.6	13	100.7	51.3	63	145.2	74.0	13	189.8	90
14	12.5		5.3	64	57.0	29.1	14	101.6	51.8	64	146.1	74.5	14	190.7	97
15	13.4	_	-	_	57.9	29.5	15	102.5	52.2	65	147.0	74.9	15	191.6	9
16	14.3	07	7-3	66	58.8	30.0	116	103.4	52.7	166	147.9	75.4	216	192.5	9
17	15.1		7.7	67	59.7	30.4	17	104.2	53.1	67	148.8	75.8	17	193.3	9
18	16.9		8.6	69	61.5	31.3	19	106.0	53.6	68	149.7	76.7	18	194 2	99
20	17.8		9.1	70	62.4	31.8	20	106 9	54.5	70	151.5	77.2	20	195.1	9
21	18.7		9.5	71	63.3	32.2	121	107.8	54.9	-	152.4	77.6	-	_	9
22	19.6		0.0	72	64.2	32.7	22	108.7	55.4	72	153.3	78.1	221	196.9	100
23	20.5	110	0.4	73	65.0	33.1	23	109.6	55.8	73	154.1	78.5	23	198.7	10
24	21.4	120	0.9	74	65.9	33.6	24	110.5	56.2	74	155.0	79 0	24	199.6	10
25	32.3	1	1.4	75	66.8	34.1	25	111.4	56.8	75	155.9	79.5	25	200.5	10
26	23.2	1	1.8	76	67.7	34.5	126	112.3	57.2	176	156.8	79.9	226	201.4	10
27	24.1		2.3	77	68.6	100	27	113.2	57-7	77	157.7	80.4	27	202.3	10
28	24.5	1	2.7	78	69.5		28	114.0	58.1	78	158.6	80.8	28	203.1	10
29			3.2	79	71.3	35.9	29	114.9	58.6	79	159.5	81.3	29	204.0	10
30	-		3.6	81			30	115.0	59.0	80	160.4	81.7	30	204.9	10
31			4.1	82	72.2		131	116 7	59.5	181	161.3	82.2	231	205.8	10
32			4.5	83	74.0		32	117.6	59.9 60.4	82 83	162.2	82.6	32	206.7	10
33	4 15.46	4 10	5.4	84	74.8	28.1	33	110.4	60.8	84	163.9	83.5	33	207.6	10
34	THE RESERVE OF THE PERSON NAMED IN		5.9	85	75.7		35	120.3		85	164.8	84.0	34	209.4	10
3		36	6.3	86	76.6	39.0	136	121.2	61.7	186	165.7	84.4	236	210.3	10
37	33.		6.8	87	77-5		37	122.1	62.2	87	166.6	84.9	37	211.2	10
37	33.	1 1	7.3	88	78.4		38	123.0		88	167.5	85.4	38	212.1	10
35	34-		7.7	89			39	123.8	63.1	89	168.4	85.8	39	212.9	10
4	35.	1	8.2	90	80.2	7000	40	134.7	63.6	90	169.3		40	213.8	10
4		5 1	8 6	91	81.1	41.3	141	125.6	64.0	191	170.2	86.7	300	267.3	13
4	37-	411	9.1	92	82.0	41.8	42		64.5		171-1	87.2	400	356.4	
4	3 38.	3] 3	9.5	93	82.0	42.2			64.9			87.6		445.5	22
4			0.0	94		42.7	44		65.4	94		100		534.6	
4	40.	-1-	10.4	95			45	129.2	-	95		-		623.7	31
4			11.3	96	86.4	43.0	146	130.1	66.3	196				712.8	36
4	7 41. 8 42.		1.8	97	87 3	44.5	47	131.0	67.2	97			900	801.9	
4			22,2	99	88.:	44.9		172.5	67.6	98			21	1782.0	
5			12.7	100	89.1	45.4	150		100	200			3000	2673.0	130
	Der		40.0		Dep		Diff		Lat.	11	Dep	Lat.	Dift	Dep.	L
4			21		1			- A	1	1	, P	1	4		1 //4

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Diff	Lat.	Dep.	Dif		Dep	Dif	_	Dep.		Lat.	Dep	· Diff	. Lat.	Dep.
1	00.9							,	11 0					94-4
1	01.8							1000	11 -			11	2 178.4	94.8
13	03.5		1 23		1					135.1				
	04.4			1.0 0					55	136.9				96.2
1-6	05.3	02.8	56	49-4		106			156	137.7	73.2	206		
1	06.2	1 2 2		50.3		07	94.5	50.2	57	138.6	73.7	07	182.8	97.2
1 8	l				27.2	12	1 230		58	139-5	74.2	08		97.7
10	0.0		60						59 60	140.4	74.6	10		98.1
11	-	-	61	53-9	-	40	98.0		161	142.2	75.6	211	186.3	90.0
12	1		62	54-7		12	98.9		62	143.0	76.1	12	187.2	99.1
13			63			13	99.8		63	143.9	76.5	13	188.1	100.0
14			64		13				64	144.8	77.0	14	189.0	100.5
15	17.2	-	66	57.4	-	15	101.5	-	65	145.7	77.5	15	189.8	100.9
			67	58.3		116	102.4	54.5	166	146.6	77-9	216	190.7	101.4
17		1 0	68	60.0		17	103.3		68	147-5	78.4		191.6	101.9
19	1-00		69	60.9		19	105.1	55.9	60	149.2	79-3	18	192.5	102.4
20	-	00.4	70	61.8	32.9	20	106.0	56.3	70	150.1	79.8	20	194.3	103.3
11	18.5		71	62.7		121	166.8	56.8	171	151.0	80.3	221	195.1	103.8
12			72	63.6	2.3	22	107.7	57.3	72	151.9	80.8		196.0	104.2
23	0		73	64.5			108.6	57.7	73	152.8	81.2	23	196.9	104.7
24 25		11.7	74 75	66.2	34.7	24	110.4	58.2	74	153.6	81.7	24	197.8	105.2
26		1-	76	67.1	35.7	126	_	-	75 176	154-5	82.6	25	198.7	105.6
27		12.7	77	68.0	36.2	27	111.3	59.2	77	155.4	83.1	226	199.6	106.1
28	24.7	13.1	78	68.9	36.6	28	113.0	60.1	78	157.2	83.6	28	201.3	107.0
29	2	13.6	79	69.8	37.1	29	113 9	60.6	79	158.1	84.0	29	202.2	107.5
30	26, 5	14.1	80	70.6	37.6	30	114.8	61.0	80	158.9	84.5	30	203.1	108.0
31	27.4	14.6	81	71.5	38.0	131	115.7	61.5	181	159.8	85.0	231	204.0	108.5
33		15.0	82	73.3	38.5	32	116.6	62.C 62.4	82	161.6	85.4	32	204.9	108.9
	30.0	16.0	84	74.2	39.4	33	118.3	62.9	84	162.5	86.4	33	205.7	109.4
35	30.9	16.4	85	75.1	39.9	35	119.3	63.4	85	163.4	86.9	35	207.5	109.9
36	31 8	16.9	86	75.9	40.4	136	120.1	63 9	186	164.2		236	208.4	110.8
- Al	32-7	17.4	87		40.8	37	121.0	64.3	87	165.1	87.8	37	209.3	111.3
38	33.6 34.4	17.8	88	77.7	41.3	38	121.9	64.8	88	166.0	88.3	38	210.2	111-7
40	35.3	18.8	90	78.6	41.8	39 40	122.7	65.3	90	166.9	88.7	39	211.0	112.2
4	36.2	19.2		80.4	-	_		66.2		_		40	211.9	112.7
		19.7	92	81.2	42.2	141	124.5	66.7	191		89.7	300	264.9	140.9
43	38.0	20.2			43.7		126.3	67.1	93	170.4	2	500	353.2	107.8
44	38.9	20.7	94	83.0	44-1	44	127.2	67.6	94	171.3		600	529.8	281.7
		21.7	95	83.9	44.6	45	128.0		95		91.6	700	618.1	328.6
40	40.6	21.6	96	84.8	45.1	146	128.9	68.5			92,0	800	706.4	375.6
48	42.4	22.1	97	85.7	45.5	47	129.8				92.5	900	794-7	422.5
49	43.3	23.0	90	86.5	46.6	48	130.7	69.5			93.0	1000	882.9	469.5
50	44-2	23.5	100	88.3	47.0	150	132.5	70.4	200		93.4	2000		939.0
Ditt	Dep.	Lat.	Dift	Dep.			Dep.				Lat.	4	Dep.	Lat.
	-	- "		-			-	- 4		P. 1		Ditt.	Deb.	Dat.

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-	OC.	00.	5 5	44.	24.7	IO	88.	3 49.0	15	1 132.	- -	-11	_	-
3 2	01.7	OF.						2 49.4	11 0		1.0		2 176	
3	02.6	01.	5 5	3 46.4	1 25.7	10						200	3 177	31.
4		03.				11							4 178	·5 98.
		02.	4 5	48.1	26.7	10	91.	50.9	5	135.	6 75.1		5 179	
6			5	49.0	27.1	106	92.7	51.4	156	136.	75.6		_	
7	06.1	3.	5	49.9		07			1 57		76.1	0	7 181	0 100.
					28.1	08	1 24.7				76.6	0	8 181.	9 100.
9						09	1 2 2 2		1 59				9 182.	8 101.
10	-	-	-11-	3	-	10	96.2	200	60	1-00	-		183.	7 101.
11	09 6	05.	61	33.4	29.6	111	1 21		161			21	-	5 102.
12		05.8	62			12			62		78.5	1:	185.	4 102
13		06.3				13			63		1.0		3 186.	3 102.
14					1 -	14	1 00 0		64					2 103.
16	13.1			-	-	15	100.6	-	65	144-3		-		104.
	14.0		66		1-	116	101.5		166	145.2		216	188.	9 104.
37		08.2	68	13		17	102.3		67	146.1		17	189	8 105.2
18	15.7					18	103.2		68	146.9		18	190.	7 105.7
19	17-5	09.2		61.2			104.1	57.7	69	147.8		19		5 106 2
20		-		-	33.2	20	105.0		70	148.7		11	192.	106.
21	18.4	10,2		62.1	34-4	121	105.8	58.7	171	149.6		221	193.	107.1
22	19.2	10.7	44		1010	22	106.7	59.1	72	150.4	83.4	2.2		
23	21.0	11.2	H , 2		133 1	23	107.6	59.6	73	151.3			1	
24	21.9	12.7		65.6		24	108.5	60.6	74	152.2	84.4	24		
25	-	_			-	-	109.3	_	75	153.1	84.8	25	_	109.1
26	22.7	12.6		66.5	36.8	126	110.2	61.1	176	153.9	85.3	226		
27	23.6	13.1		67.3		27	111.1	61.6	77	154.8	85.8	27		
28	24.5				37.8	29	111.9	62.5	78	155.7	86.3	28	1 20	
29	26.2	14.5			38.8	30	22.5		79 80			29		
30	_	_	-	70.8	_	-	113.7	63.0	-	157.4	87.3	30	201.2	-
31	27.1	15.0	11 -		39.3	131	114.6	63.5	181	158.3	87.7	231	202.0	
32	28.9	16.0		71.7	00	32	116.3	64.0	82	159.2	88.2	32	202.9	
33	29.7	16.5	84	73-5		33	117.2	64-5	84	160.9	89.2	33	203.8	
34	30.6	17.0		74.3	41.2	35	118.1	65.4	85	161.8	89.7	34	204.7	
35	31.5	17.5	86	75.2	_	136	118.9		186	162.7		35	205.5	-
36		17.9	11 -	76.1	41.7	37		65.9	87	163.6	90.2	236	206.4	
37	33.2	18.4		77.0	42.7	38	120.7	66.9	88	164.4	90.7	37	207.3	
39	34.1	18.9	89	77.8	43.1	39	121.6	67.4	89	165.3	91.6	38	200.2	
40	35.0	19.4	90	78.7	43.6	40	122.4	67.9	90	166.2	92.1	39 40	209.0	1164
_	35.9	_	91	-	44.1	_	123.3		191	167.0	-	-	262.4	
42	36.7	20.4		80.5	44.6	42	124.2	68.8	92	167.9		300		
42	37.6	20.8	93	81.3	45.1	43	125.1	60.2	93	163.8			349-9	
44	38.5	21.3	94	82.2	45.6	44	125.9	60.8	94	169.7	04.1	600	524.8	290.9
45	39.4	21.8	95	83.1	46.1	45	126.8	70.3	95	170.5	94.5	700	612 2	339-4
	40.2				46.5	146	127.7	70.8	196		-	800	_	387.9
47	41.1	22.8			47.0	47	128.6	77.0	97	171.4	95.0	900	787-2	
48	42.0	23.3		85.7	47.5	48	129.4	71.8	98	173.2	95.5	1000	874.6	
49	42.9	23.8	99	86.6	48.0		130.3	73.2	99	174.0	96.5	2000	1749-2	969.6
.50	43.7	24.2	100	87.5	48.5	150	131.2	72.7	200	174.9		3000	2623,8	
Dift	Dep.	Lat.	Diff	Dep.	Lat.	Dift		Lat.			Lat.	Diff.	Dep.	Lat.
	-	-		1	-					- P. 1		-		

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100.8 101.3 101.8 102.3 102.8

103.3

104.7 105.2 105.7 106.7 106.7 107.1 107.6 108.1 109.6 110.0 110.5 111.0

112.5 113.0 113.4 113.9

114.9 115.4 115.9 116.4

145.4 193.9 242.4 290.9 339.4

387.9 436.3 484.8 969.6 1454.4

T			**			30 I)egre	es.					
Dift Lat.	Dep.		-	Dep.	11-		Dep.		-	Dep.	Dift		Dep.
100.9	00.5	51	44.2	25.2	101	87.5	50.5	151		75.5			
2 01.7	01.0		45.0	26.0	02	89.2	51.0	52	131.6		11		
3 02.6	02.0	53	46.8	27.0		90.1		53 54	133.4				
904.3	02.5	55	47.6	27.5	05	90.9		55	134.2		05		
6 05.2	03.0	1	48.5	28.0		91.8		156	135.1		206		
7 06.1	03.5	57	49.4	28.5	07	92.7		57	136.0	78.5	07		
8 06.9	04.0		50.2	29.0	08	93.5		58	136.8	79.0	08	180.1	104.0
9 07.8	04.5	59	51.1	29.5	09	94.4	154-5	59 60	137-7	79.5	09	181.0	104.5
10 08.7	05.0			30.0	10	95.3	55.0		138.6	80.0	10	181.9	105.0
11 09.5	05.5	61	52.8	30.5		96.1		161	139.4	80.5	211	182.7	105.5
12 10.4	06.0	62	53.7	31.0		97.0		62	140.3	81.0	12	183.6	106.0
13 11.3	06.5		54.6	31.5	13	97.9		63	141.2	81.5	13	184.5	106.5
14 12,1	07.0	64	55.4	32.5	14	98.7		64	142.0	82.5	14	185.3	107.0
15 13.0	07.5			_	15	99.6			142.9		15	186.2	107.5
16 13 9	08.0	66	57.2	33.0	116	100.5	58.0	166	143.8	83.5	216	287.1	108.0
17 14-7		68	58.9	33.5	17	101.3	59.0	68	144.6	84.0	18	187.9	
19 16.5	09.5	69	59.8	34.5	19	103.1	59.5	69	146.4	84.5	19	189.7	109.0
20 17.3	10.0	70	60.6	35.0	20	103.9	60.0	70	147.2	85.0	20	190.5	110.0
20 17.3	10.5	71	61.5	35-5	121	104.8	60.5	171	148.1	85.5	221	101.4	110.5
12 19.1	11.0	72	62.4	36.0	22	105.7	61.0	72	149.0	86.0	22	192.3	111.0
13 19.9	11.5	73	63.2	36.5	23	106.5	61.5	73	149.8	86.5	23	193.1	111.5
24 20 8	12.0	74	64.1	37.0	24	107.4	62.0	74	150.7	87.0	24	194.0	1120
25 21.7	12.5	75	65.0	37.5	25	108.3	62.5	75	151.6	87.5	25	194.9	172.5
26 22.5	13.0	76	65.8	38.0	126	109.1	63.0	176	152.4	88.0	226	195-7	213.0
27 23.4	13.5	77	66.7	38.5	27	110.0	63.5	77	153-3	88.5	27	196.6	113.5
28 24.2	14.0	78	67.5	39.0	28	110.8	64.0	78	154-1	89.0	28	197.4	114.0
29 25.1	14.5	79	68.4	39.5	29	111.7	65.0	79 80	155.0	90.0	29	198.3	114.5
30 26.0		. 81	9.3	-	30			181	155.9		30	199.2	115.0
32 27.7	15.5	82	70.1	40.5	131	113.4	65.5	82	150.7	90.5	231	200.0	115.5
33 28.6	16.5	83	71.9	41.5	33	114-3	66.5	83	158.5	91.0	32 33	200.9	116.0
34 29-4	17:0	84	72.7	42.0	34	1160	67.0	84	159.3	92.0	34	202.6	117.0
35 30.3	17.5	85	736	42 5	35	116.9	67.5	85	160.2	92.5	35	203.5	117-5
36 31.2	18.0	86	74.5	43.0	136	117.8	68.0	186	161.1	930	236	204.4	118.0
37 32,0	18.5	-87	75.3	43.5	37	118.6	68.5	87	161.9	93.5	37	205.21	118.5
38 32.9	19.0	88	76.4	44.0	38	119.5	69.0	88	162.8	94.0	38	206.1	119.0
39 33.8	19.5	089	77.1	44-5	139	120.4	69.5	89	163.7	94.5	39	207.0	119.5
40 34.6	20.0	90	77.9	45 9	40	121.2	70.0	90	164.5	95.0	40	207.8	120.3
# 32.5	20.5	91	78.8	45.5	141	122.1	70.5	191	165.4	95-5	300	259.8	150.0
42 36.4	21.0	92	79.7	46.0	42		71.0	92	166.3	96.0	400	346.4	200.0
43 37:2	21.5	93	80 5	46.5			71.5		167.1	96.5	500	433.0	
45 10.0	22.5	94	81.4	47.5		124.7		94	168.0	97.0	600	519.6	300.0
46 39.8	_	32	82.3	47.5	45	125.6	72.5	95	-	97.5	700	606.2	3 50.0
47 40.7	23.0	96	83.1	48.5			73.0	196	169.7	98.0	800	6,2.8	400.0
48 41.5	24.0	97	84.9	49.0			73.5	97 98	170.6	98.5	1000	779·4 866.0	450.0
49 12.4	24.5		85.7			129 0	74.5	99	172.3	99.5	2000	1732.0	
50 42.2	25.01	100	86.6	50.0		129.9	- 41		173.2	100.0	3000	2598.0	1 500.C
Diff Dep.	Lat				Dift	Cep.				L:t.	Dift.	Dep.	Lat.
	- 11	-	-	-	-				1	- 1			

				1		-	31 1	Jegr	ces.					,
Dift	Lat.	Dep.	Dift	Lat.	Dep.	Dift			Dift	Lat.	Dep.	Dift.	Lac.	D.
3	00.9	00.5	51	43-7	26.3	101	86.6		152	129-4	77.8	201	-	10
.2	01.7	0.10	52	44.6	26.8	02	87.4		52	130.3	78.3	02		10
3	02.6	01.5	53	7.2	47-3	03		53.0	53	131.1	78.8	03	174.0	10
4	03.4	02.1	54	46.3	47.8	04	89.1			132.0	79-3	04	174.8	10
5	04 3	02.6	55	47-1	28.3	05	90 0		55		79.8		475-7	Ic
6	05.1	03.1	56		28.8	106	90.8	54.6	156	133-7	80.3	206	176.5	10
8	06.0	03.6	57	48.8	29.4	07	91.7		57		80.9	07	177.4	10
	07.7	04.1	58	49.7	29.4	08		55.6				08	178.3	10
9	08.6	05.2	60	51.4	30.4	10	93.4	56.7	59	130.3	81.9	09	179.1	10
11	09.4	-	61	52.3		-		-	-					10
11		06.2	62		31.4	111	95.1	57.7	161	138.8	82.9	211	180.8	10
13		06.7		54 0	32.4	13	96.8	58.2	63	139.7	83.4		181.7	10
14	200	07.2	64	54.8	33.0	14	97.7	58.7	64	140.5	84.5	13	183.4	11
15	12.9	07.7	65	55.7	33.5	15	98.6	59.2	65		85.0	15	184.3	11
16	13.7	08.2	66	56.6	34.0	116	99.4	59.7	166	142.3	85.5	216	185.1	11
17	14.6	08.8	67	57.4	34.5	17	100.3	60.3	67	143.1	36.0	17	186.0	11
18			68	58.3		18	101.1	60.8	68	144.6		18	186.8	11
19	16.3	09.8	69	59.1	35-5	19	102.0	61.3	69	144.8	87.0	19	187-7	11
20	17.1	10.3	70	60.0	-	20	102.8	61.8	70	145.7	87.6	20	188.5	11
2.1	18.0	10.4	71	60.8	36.6	121	103.7		171	146.5	88.1	221	189.4	11
22	18.9	11.3	72	61.7	37.1	22	104.6	62.8	72	147.4	88.6	22	190.3	11
23	19.7	11.8	73	62.6	37.6		105.4	63.3	73	148.3	89.1	23	191.1	11
24	20.6	12.4	74	63.4	38.1	24	106.3	63.9	74		89.6	24	192.0	1)
25	21.4	12.9	75	64.3	38.6	25	107.1	04.4	75	150.0	90.1	25	192.8	11
26	22.3	13.4	76	65.3		126	108.0		-	150.8	90.6	226	193-7	11
27	23.1	13.9	77	66.0	32.	27	108.8			151.7	91.2	27	194-5	11
28	24.0	14.4	78	66.8		28	109.7		78			28	195-4	11
29	24.9		79	67.7		1 - 2	110.0	4	79		92.2	29	196.3	11
30	25.7	-	80	68.6	41.2	30	111.4		80	-	92 7	30	197.1	11
31		16.0	81	69.4		131	112.3	67.5	191	155.1	93.2	231	197.9	11
32		16.5	82	70.3		32	113.1	100		156.0		32	198.8	11
33	28.3		83	71.1		33	114.0		83		94.2	33	199.7	12
34	300	17.5	85	72-8		34	114.8		84	157.7	94.8	34	200.5	12
	-	18.5	86	-	-	15	-			-	95.3	35	-	-
30	30.9		86	73.7	44-3	136	116.6	1-4.6	186		95.8	236	202.3	12
38	31.7	19.1		75.4		37	117.4		88	160.3	96.8	37	203.1	12
39	33.4		89	76.3	45.8	38	119.1		80		97.3	38	204.8	12
40	34-3	20.6	90	P		40	120.0	72.1	90	162.8	97-9	40	205.7	12
41	25.3	21.1			46.0			72.6	1	163.7	98.4	300	257.3	15
		21.6			47.4	42	121.7	73.1	92	164.5			342.9	20
43	36.0	22.1	02		47.9	42	122.6	73.6	02	165.4	99.4		428.6	25
44	37.7	22.6	94	80.6	48.4	44	123.4	74.2	94	166.3	99.9		514.3	30
45		23.2	95	81.4	48.9	45	124.3	74-7	95	167.1	100.4	700	600.0	36
46	_	23.7			49-4					168.0	100.9	800	685.7	41
47		24.2	97	83.1	50.0	47	126.0	75.7		168.8	101.5	900	771.4	46
48	41.1	24.7	98	84.0	50.5	48		76.2	98	169.7			857.2	51
49	42.0	25.2	99	84.8	51.0	40	127.7	76.7		170 5	102.5	2000	17144	
50	42.9	25.8	100	85.7	51.5	150	128.6	77.3	200	171.4	103 0	3000	2571.6	154
					Lat.			Lat.				Dia.	Dep.	L

103.9

105.1

107.1

109.2

111.5 111.5 112.5 112.5

113.

117.4 117.9 118.4 119.6 120.6 120.6 121.6

123. 123. 154. 206. 257. 309. 360. 412. 463. 515. 1030. 154.

| | | | | 32 D | egree | s. | 1 | 1 | | - | |
|------------------------------|--|----------------------|------|------------|-------|----------|-------|-------|--------------|--------|--------|
| DiffLat. Dep. | Dift | Lat. Dep | | | Dep. | | Lat. | Dep. | Dift. | Lat. | Dep. |
| 1 00.8 00.5 | 51 4 | 13 2 27 | | 85.6 | 53.5 | 151 | 128.0 | 80.0 | 201 | 170.4 | 106.5 |
| 101.7 01.1 | | 14.1 27 | 02 | 86.5 | 54.1 | 52 | 128.9 | 80,6 | 02 | 171.3 | 107.1 |
| 102.5 01.6 | 53 4 | 14.9 28. | 1 03 | 87.3 | 54.6 | 53 | 129.7 | 81.1 | 03 | 172.1 | 107.6 |
| 4 03.4 02.1 | 54 4 | 15.8 28. | 04 | 38.2 | 55.1 | 54 | 130.6 | 81.6 | 04 | 173.0 | 108.1 |
| 104.2 02.7 | 55 4 | 16.6 29. | 05 | 89.0 | 55.7 | 55 | 131.4 | 82.2 | 05 | 173.8 | 108.7 |
| 605.1 03.2 | 56 4 | 17.5 29. | 106 | 89.9 | 56.2 | 156 | 132.3 | 82.7 | 206 | 174-7 | 109.2 |
| | 57 4 | 18.3 30. | 07 | 90.7 | 56.7 | 57 | 133.1 | 83.2 | 07 | 175.5 | 109.7 |
| 7 05.9 03.7 | | 19.2 30. | 08 | 91.6 | 57.2 | 58 | 134.0 | 83.7 | 08 | 176.4 | 110.2 |
| 9 07.6 04.8 | 59 5 | 50.0 31. | 3 09 | 92.4 | 57.8 | 59
60 | 134.8 | 84.3 | 09 | 177.2 | 110.8 |
| 10 08.5 05.3 | | 50.9 31. | | 93.3 | 58.3 | | 135.7 | 84.8 | 10 | 178.1 | 111.3 |
| 11 09.3 05.8 | 61 5 | 51.7 32. | | 94.1 | 58.8 | 161 | 136.5 | 85.3 | 211 | 178.9 | 111.8 |
| 12 10.2 06.4 | 62 5 | 52.6 32. | | 95.0 | 59.4 | 62 | 137.4 | 85.0 | 12 | 179.8 | 112.4 |
| 13 11.0 06.9 | 63 5 | 53.4 33. | | 95.8 | 59.9 | 63 | 138.2 | 86.4 | 13 | 180.6 | 112.9 |
| 14 11.9 07.4 | 64 5 | 54-3 33- | | 96.7 | 60.4 | 64 | 139.1 | 86.9 | 14 | 181.5 | 113.4 |
| 15 12.7 08.0
16 13.6 08.5 | 65 | 55.1 34. | 15 | 97.5 | | 65 | 139.9 | 87.5 | 15 | 182.3 | 114.0 |
| | 66 | 56.0 35. | 116 | 98.4 | 61.5 | 166 | 140.8 | 88.0 | 216 | 183.2 | 114.5 |
| 17 14.4 09.0 | 67 5 | 56.8 35.
57.7 36. | 5 17 | 99.2 | 62.0 | 67 | 141.6 | 88.5 | 17 | 184.0 | 115.0 |
| 18 15.3 09.5 | | 57.7 36.
58.5 35. | 18 | 100.1 | 62.5 | 68 | 142.5 | 89.0 | 18 | 184.9 | 115.5 |
| 19 16.1 10.1 | | | | 100.9 | 63.1 | 69 | 143.3 | 89.6 | 19 | 185.7 | 116.1 |
| 20 17.0 10.6 | | 59.4 37. | 20 | | _ | 70 | 144.2 | | 221 | - | 116.6 |
| 21 17.0 11.1 | 71 0 | 50.2 37.
51.1 38. | 121 | 102.6 | 64.1 | 171 | 145.0 | 90.6 | | 187.4 | 117.1 |
| 12 18.7 11.7 | | 51.9 38. | | 103.5 | 65.2 | 72 | 145.9 | 91.2 | 22 | 189.1 | 117.7 |
| 13 19.5 12.2 | | 52.8 39. | | 105.2 | 65.7 | 73 | 147.6 | 91.7 | 23 | 190.0 | 118.2 |
| | | 63.6 39. | | 106.0 | 66.3 | 75 | 148.4 | 92.8 | 25 | 190.8 | 119.3 |
| 25 21.2 13.3
26 22.0 13.8 | | 4.4 40. | | 106.8 | 66.8 | 176 | 149.2 | 93.3 | 226 | 191.6 | 119.8 |
| 17 22.9 14.3 | 77 6 | 5.3 40. | 8 27 | 107.7 | 67.3 | 77 | 150.1 | 93.8 | 27 | 192.5 | 120,3 |
| 28 23.7 14.8 | 77 6 | 66.1 41. | | 108.5 | 67.8 | 78 | 150.9 | 94:3 | 28 | 193.3 | 120 8 |
| 29 24.6 15.4 | 79 6 | 57.0 41. | | 109.4 | 68.4 | 79 | 151.8 | 94-9 | 29 | 194.2 | 121.4 |
| 30 25.4 15.9 | | 67.8 42. | 30 | 110.2 | 68.9 | 80 | 152.6 | 95.4 | 30 | 195.0 | 121.9 |
| 31 16.3 16.4 | | 58.7 42. | 131 | 111.1 | 69.4 | 181 | 153.5 | 95.9 | 231 | 195.9 | 122.4 |
| 32 27.1 17.0 | | 59 5 43. | 5 32 | 111.9 | 70.0 | 82 | 154-3 | 96.5 | 32 | 196.7 | 123.0 |
| 13 28.0 17.5 | | 70.4 44. | | 112.8 | 70.5 | 83 | 155.2 | 97.0 | 33 | 197.6 | 123.5 |
| 14 28 8 13 0 | 84 7 | 71.2 44. | | 113.6 | 71.0 | 84 | 156.0 | 97.5 | 34 | 198.4 | 124.0 |
| 15 29-7 13 6 | 86 7 | 72.1 45. | | 114.5 | 71.6 | 85 | 156.9 | | 35 | 199.3 | 124.6 |
| 36 30.5 19 1 | 80 7 | 72.9 45. | 136 | 115.3 | 72.1 | 186 | 157.7 | 98.6 | 236 | 200 1 | 125.1 |
| 37 31.4 19.6 | 87 7 | 73 8 46. | | 116.2 | 72.6 | 87 | 158.6 | 99.1 | 37 | 201.0 | 125.6 |
| 38 32.2 20.1 | 88 7 | | | 117.0 | 73.1 | 89 | 159.4 | 99.6 | 38 | | 126.1 |
| 39 33.1 20.7
40 33.9 21.2 | | 75.5 47. | 39 | 117.9 | 73.7 | 90 | 161.1 | 100.7 | . 39
. 4c | 202.7 | 126.7 |
| | | | - | | _ | _ | 162.0 | - | | | 127.2 |
| | 91 7 | 77.2 48 | 141 | 119.6 | 74.7 | 191 | 162.8 | 101.2 | 300 | 254.4 | 159.0 |
| 43 36.5 22.8 | | 78.9 49. | 42 | 121.3 | 75.8 | 92 | 163.7 | 102.3 | 500 | | 212,0 |
| 4 37.3 23.3 | | 79.7 49. | 43 | 122.1 | 76.2 | 94 | 164.5 | 102 8 | 600 | 508.8 | 365.0 |
| 45 38.2 23.0 | 94 7 | 0.6 50. | | 123.0 | | 95 | 165.4 | 103.4 | 700 | 593.6 | 370.9 |
| 45 38.2 27.9
46 39.0 24.4 | 96 3 | 1.4 50. | - 11 | 123.8 | | 196 | - | 103.9 | _ | 678.4 | 423.9 |
| 17 39 9 24.9 | 97 8 | 2.3 51. | | 124.7 | 77.9 | 97 | 167.1 | 104.4 | | 7632 | 476.9 |
| 45 40.7 25.4 | 98 8 | 3.1 51. | | 125-5 | | 98 | 167.9 | 104.9 | 1000 | 848.0 | 529.9 |
| 49 41.6 26.0 | 99 8 | 4.0 52. | 49 | 126.4 | 79.0 | 99 | 168.8 | 105.5 | 2000 | 1696.0 | 1059.8 |
| 50 42.4 20.5 | 100 8 | 4.8 53. | 150 | | | 200 | 169.6 | | | 2544.0 | 1589.7 |
| Dift Dep. Lat. | Dia I | Dep. Lat | Dift | Dep. | Lat. | Ditt | Dep. | Lat. | Dift. | Dep. | Lat. |
| | T (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | ALCOHOL: N | | | | | | | |

| * | | | <u> </u> | - (100,000 | | NE WA | 33 | Degr | ees. | | - | 17 | - | |
|-------|-------------|------|----------|------------|--------------|----------|-------|-------|-------------|-------------|-------|---------------|----------------|------|
| Diff | Lat. | Dep. | Dift | Lat. | Dep. | Dift | Lat. | Dep. | n Dift | Lat. | Dep. | 1Dift. | Lat. | 2.42 |
| - | 00.8 | _ | - | 42.8 | 27.8 | - | 84.7 | - | 1 - | - | | | - 10 1 | 1 De |
| 20.00 | | 00.5 | 51 | 43.6 | 28.3 | 101 | 85.5 | 550 | 151 | 1 1 1 1 1 1 | | H | 168.6 | |
| 2 | 01.7 | 01.6 | | 44.4 | | 02 | 86.4 | 55.5 | 52 | 1 0 | 83.3 | 02 | 1 | |
| 3 | 03.4 | 02.2 | 53 | 45.3 | 29.4 | 03 | 87.2 | 56.6 | 53 | | | 11 | | |
| 4 | 04.2 | 02.7 | 54 | 46.1 | 30.0 | 05 | 88.1 | 57.2 | 54 | | 84.4 | | | |
| 6 | - | - | _ | _ | - | - | 88.9 | _ | 55 | - | _ | - | | 11 |
| 9931 | 05.0 | 03.8 | 56 | 47.8 | 30.5 | 106 | 89.7 | 57.7 | 156 | 130.8 | 85.0 | 206 | | 11 |
| 8 | 06.7 | 04.4 | 57 | 18.6 | 31.6 | 08 | 90.6 | 58.8 | 57 | 131.7 | | | 173.6 | • |
| 5.534 | 07.5 | 04.9 | 58 | 49.5 | 32.1 | 09 | 91.4 | 159.4 | 58 | 132.5 | | 11 | | 1 |
| 10 | 08.4 | 05.4 | 60 | 50.3 | | 10 | 92.2 | 59.9 | 59
60 | 134.2 | 1 4 | 09 | 16 | 1 |
| - | _ | 06.0 | 61 | 51.2 | | - | | 60.5 | _ | _ | | 10 | - | 11 |
| 11 | 10.1 | 06.5 | 62 | 52.0 | 33.2 | 111 | 93.1 | 61.0 | 161 | 135.0 | | 11 | 176.9 | 11 |
| 12 | 1040 | 07.1 | 63 | 52.8 | 34.3 | 12 | 93.9 | 61.5 | 62 | 135.9 | | | | 11 |
| 13 | 11.7 | 07.6 | 64 | | 34.9 | 13
14 | 95.6 | 62.1 | 63 | 130.7 | | 13 | | 11 |
| 14 | 12.6 | 08.2 | 65 | 54-5 | | | 96.4 | 62.6 | 64 | | 89.9 | | 179.5 | 11 |
| 15 | _ | 08.7 | 66 | | | 15 | | | 65 | | | 15 | | 11 |
| 16 | 13.4 | | 67 | 55.3 | | 116 | 97.3 | 63.2 | 166 | 139.2 | | 216 | 181.1 | 11 |
| 17 | | 09.3 | 68 | | 36.5 | 17 | 98.1 | 64.7 | 67 | 140.0 | | 17 | 182.0 | 11 |
| 18 | 15.1 | 10.3 | 69 | | 37.6 | 18 | 99.0 | 64.8 | 68 | 140.9 | | 18 | 182.8 | ti |
| 19 | 16.8 | 10.9 | 70 | | 38.1 | 19 | 100.6 | 65.4 | 69 | 142.6 | | 11 -2 | 183.7 | - 11 |
| 20 | - | | | | | 20 | _ | - | 70 | - | - | 20 | | 11 |
| 21 | 17.6 | 11.4 | 71 | 59.5 | 38.7 | 121 | 101.5 | 65.9 | 171 | 143.4 | | 221 | 185.3 | 12 |
| 22 | 18.4 | 12.0 | 72 | 67.0 | 39.2 | 22 | 102.3 | 66.4 | 72 | 144.2 | | 22 | 186.2 | 12 |
| 23 | 19.3 | 12.5 | 73 | 62. | 39.8 | 23 | 103.1 | | 73 | 145.1 | | . 23 | 187.0 | 1: |
| 24 | 21.0 | 13.6 | 74 | 62.0 | 40.8 | 24 | 104.0 | 67.5 | 74 | 145-9 | | 24 | 187.8 | 12 |
| 25 | | | _ | - | | 25 | - | - | 75 | | 95.3 | 25 | | 12 |
| 26 | 21.8 | 14.2 | 76 | 63.7 | | 126 | 105.7 | 68.6 | 176 | 147.6 | | 226 | 189.5 | 12 |
| 27 | 32.6 | 14.7 | 77 | 64.6 | | 27 | 106.5 | 69.2 | 77 | 148.4 | | | 190.4 | 12 |
| 28 | 23.5 | | 78 | | 42.5 | 28 | 107.3 | 59.7 | 78 | 149.3 | 96.9 | 28 | 191.2 | 11 |
| 29 | 24.3 | | 80 | 67.1 | 43,0 | 29 | 109.0 | 70.8 | 79 | 150.1 | | 29 | 192.0 | 132 |
| 30 | _ | | 81 | - | - | 30 | - | - | 80 | | 98.0 | 30 | 192.9 | 12 |
| 31 | 26.0 | 16.9 | 82 | 68.8 | | 131 | 109.9 | 71.3 | 181 | 151.8 | | 231 | 193.7 | 12 |
| 32 | M. C. + 521 | 17.4 | 83 | 69.6 | | 32 | | 71.9 | 82 | 152.6 | | 32 | 194.6 | 12 |
| 33 | 27.7 | | 84 | | 45.2 | 3:3 | 111.5 | 72.4 | 83 | 153.5 | 260 | 33 | 195.4 | 12 |
| 34 | 28.5 | | 84 | | 45.7 | | 112.4 | 73.0 | 84 | 154-3 | | 34 | 190.2 | 12 |
| 35 | 29 4 | | - | _ | 46.3 | 35 | 113.2 | 73.5 | 85 | | 100.8 | 35 | 197.1 | 22 |
| 36 | 30.2 | 19.6 | 86 | 72.1 | 46.8 | 136 | 114.0 | 74-1 | 186 | 156.0 | | 236 | 197.9 | 11 |
| 37 | | 20.2 | 87 | 73.0 | 47-4 | 37 | 114.9 | 74.6 | 87 | | 101 8 | 37 | 198.7 | 1: |
| 38 | 31.9 | 20.7 | 89 | | 47.9 | 38 | 115.7 | 75.3 | 88 | 157.7 | | 38 | 199.6 | 12 |
| 39 | 32.7 | 21.8 | | | | 39 | 116.6 | 75.7 | 89 | 158.5 | | 39 | 200.4 | 13 |
| 40 | 33.5 | - | 90 | | 49.0 | 40 | 117.4 | 76.2 | 90 | 159.3 | 103.5 | 40 | 201.3 | 13 |
| | 34-4 | | | | 49.6 | | | | 191 | | 104.0 | | 251.6 | 16 |
| 42 | 35.2 | 22.9 | 92 | 77.2 | 50.1 | | 119.1 | | 92 | 101.0 | 104.6 | | | |
| 43 | 30.1 | 23.4 | 93 | 70.0 | 50.6 | | 1199 | 77.9 | 93 | | 105.1 | 2 | 419-3 | 27 |
| 11.00 | | 24.0 | | | | | 120.8 | | 94 | 162.7 | 105.7 | 600 | 503.2 | 32 |
| 45 | | 24.5 | 95 | 79.7 | 51.7 | 45 | 121.6 | 79.0 | 95 | 163.5 | 106.2 | 700 | 587.1 | 38 |
| 46 | 38.6 | 25.1 | 90 | 80.5 | 53.3 | 146 | 122.4 | 79.5 | 196 | 164.4 | | 800 | 670.9 | 43 |
| 47 | 39.4 | 25.6 | 97 | 81.3 | 52.8 | 47 | 123.3 | 80.1 | 97 | 165.2 | 107.3 | 900 | 754.8 | 49 |
| 48 | 40.3 | 20.1 | 98 | 82.2 | 53-4 | 48 | 124.1 | 80.6 | 98 | 166.0 | 107-8 | 1000 | 838.7 | 54 |
| | | 26.7 | 99 | 83.0 | 53.9 | 49 | 125.0 | 1.18 | 99 | 166.9 | 108.4 | 2000 | 1677-4 | |
| 50 | 41.9 | | 100 | 83.9 | 54.5
Lat. | 150 | 125.8 | | 200
Dift | 167.7 | | 3000
Dift. | 2516.1
Dep. | 163 |
| | Dep. | Lat. | | | | | | | | | | | | L |

Dep.

109. 110. 111. 112. 113. 113. 114. 115. 116. 117. 117. 118. 119. 119. 119. 119. 120.

122.

123. 123. 124. 124. 125. 125.

126. 127. 127. 128.

129. 129. 130. 130. 163. 217. 272. 326. 381.

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| - | - | | | | | | 34 I |)egre | es. | | | 1 | | - 1 |
|----------------|-------|------|----------|--------------|--------------|------|-------|--------------|----------|-------|-------|-------|--------|--------|
| Dift | Lat. | Dap. | Dift | Lat. | Dep. | Dift | Lat. | Dep. | Dift | Lat. | Dep. | Dift. | Lat. | Dep. |
| - | 00.8 | 00.6 | 51 | 42.3 | 28.5 | 101 | 83.7 | 56.5 | 151 | 125.2 | 84.4 | 201 | 166.6 | 113.4 |
| 1 | 01.7 | 01.1 | 52 | 43.1 | 19.1 | 02 | 84.0 | 57.0 | 52 | 126.0 | 85.0 | 02 | 167.5 | 113.0 |
| 1 | 02.5 | 01.7 | 53 | 43.9 | 19.6 | 03 | 85.4 | 57.6 | 53 | 1268 | 85.6 | 03 | 168.3 | 113.5 |
| 3 | 03.3 | 02.2 | 54 | 44.8 | 30.2 | 04 | 86.2 | 58.2 | 54 | 127.7 | 86.1 | 04 | 169.1 | 114.1 |
| 1 5 | 04.1 | 02.8 | 55 | 45.6 | 30.8 | -05 | 87.0 | 58.7 | 55 | 128.5 | 86.7 | 05 | 169.9 | 114.6 |
| 1-5 | 05.0 | 03.4 | 56 | 46.4 | 31.3 | 106 | 87.9 | 59.3 | 156 | 129.3 | 87.2 | 206 | 170.8 | 115.2 |
| 1 7 | 05.8 | 03.9 | 57 | 47.3 | 31.9 | 07 | 88.7 | 59.8 | 57 | 130.2 | 87.8 | 07 | 171.6 | 115.8 |
| 8 | | 04.5 | 58 | 48.1 | 32.4 | 08 | 90.4 | 61,0 | 58 | 131.0 | 88.9 | 08 | 172.4 | 116.9 |
| 9 | 07.5 | 05.6 | 59 | 49.7 | 33.0
33.6 | 10 | 91.2 | 61.5 | 59
60 | 132.6 | 89.5 | 10 | 173-3 | 117.4 |
| 10 | _ | 06.2 | 61 | 50.6 | 34-1 | _ | 92.0 | 62-1 | 161 | 133.5 | 90.0 | - | - | |
| | 09.1 | | 62 | 51.4 | 34.7 | 111 | 92.8 | 62.6 | 62 | 134.3 | 90.6 | 211 | 174-9 | 118.6 |
| 12 | 10.8 | 07.3 | 63 | 52.2 | 35.2 | 13 | 93.7 | 63.2 | 63 | 135.1 | 91.1 | 13 | 176.6 | 119.1 |
| 13 | 11.6 | 07.8 | 64 | 53.1 | 35.8 | 14 | 94.5 | 63.7 | 64 | 136.0 | 91.7 | 14 | 177.4 | 119.7 |
| 14 | 12.4 | 08.4 | 65 | 53 9 | 36.3 | 15 | 95:3 | 64.3 | 65 | 136.3 | 92.3 | 15 | 178.2 | 120.2 |
| 15 16 | 13.3 | 08.9 | 66 | 54.7 | 36.9 | 116 | 96.2 | 64.9 | 166 | 137.6 | 92.8 | 216 | 179.1 | 120.8 |
| 10 | 14.1 | 09.5 | 67 | 55.5 | 37.5 | 17 | 97.0 | 65.4 | 67 | 138.4 | 93.4 | 17 | 179.9 | 121.3 |
| 17 | 14.9 | 10.1 | 68 | 56.4 | 38.0 | 18 | 97.8 | 66.0 | 68 | 139.3 | 93-9 | 18 | 180.7 | 121.9 |
| 19 | 15.8 | 10.6 | 69 | 57.2 | 38.6 | 19 | 98.7 | 66.5 | 69 | 140.1 | 94-5 | 19 | 181.6 | 122.5 |
| 20 | 16.6 | 11.2 | 70 | 58.0 | 39.1 | 20 | 99.5 | 67.1 | 70 | 140.9 | 95.1 | 20 | 182.4 | 123.0 |
| 20
21 | 17.4 | 11.7 | 71 | 58.9 | 39.7 | 121 | 100.3 | 67.7 | 171 | 141.8 | 95.6 | 221 | 183.2 | 123.6 |
| 31 | 18.2 | 12.3 | 72 | 59.7 | 40.3 | 22 | 101.1 | 68.2 | 72 | 142.6 | 96.2 | 22 | 184.0 | 124.1 |
| 31
43 | 19.1 | 12.9 | 73 | 60.5 | 40.8 | 23 | 102.0 | 68.8 | 73 | 143.4 | 96.7 | 23 | 184.9 | 124.7 |
| 14 | 19.9 | 13.4 | 74 | 61.3 | 41.4 | 24 | 102.8 | 69.3 | 74 | 144.2 | 97-3 | 24 | 185-7 | 125.3 |
| 25 26 | 20.7 | 14.0 | 75 | 62.2 | 41.9 | 25 | 103.6 | 69.9 | 75 | 145.1 | 97-9 | 25 | 186.5 | 125.8 |
| 26 | 21.6 | 14.5 | 76 | 63.0 | 42.5 | 126 | 104.5 | 70.5 | 176 | 145.9 | 98.4 | 226 | 187.4 | 126.4 |
| 27 28 | 22.4 | 15.1 | 77 | 63.8 | 43.1 | 27 | 105.3 | 71.0 | 77 | 146.7 | 99.0 | 27 | 188.2 | 126.9 |
| 28 | 23.2 | 15.7 | 78 | 64.7 | 43.6 | 28 | 106.1 | 71.6 | 78 | 147.6 | 99.5 | 28 | 189.0 | 127.5 |
| 29 | 24.0 | 16.8 | 79
80 | 65.5 | 44.2 | 30 | 106.9 | 72.7 | 80 | 149.2 | 100.1 | 30 | 189.8 | 128.1 |
| 30 | 24 9 | 17 3 | 81 | | _ | - | - | _ | 181 | | - | | - | - |
| 31 | 25.7 | 17.9 | 81 | 67.1
68.0 | 45.3 | 131 | 108.6 | 73.3
73.8 | 82 | 150.0 | 101.8 | 231 | 191.5 | 129.2 |
| 32 | 27.2 | 18.5 | 83 | 68.8 | 45.9 | 32 | 109.4 | 74-4 | 83 | 151.7 | 102.3 | 32 | 192.3 | 129.7 |
| 33
34 | 28.4 | 19.0 | 84 | 69.6 | 47.0 | 34 | 111.1 | 74.9 | 84 | 152.5 | 102.9 | 34 | 194.0 | 130.3 |
| | 29.0 | 19.6 | 85 | 70.5 | 47-5 | 35 | 111.9 | 75.5 | 85 | 153.4 | 103.5 | 35 | 194 8 | 131.4 |
| 1 20 | 29.8 | 20.1 | 86 | 71.3 | 48.1 | 136 | 112.7 | 76.1 | 186 | 154.2 | 104.0 | 236 | 195.6 | 132.0 |
| 35
36
37 | 30.7 | 20.7 | 87 | 72.1 | 48.7 | 37 | 113.6 | 76.6 | 87 | 1550 | 104.6 | 37 | 196.5 | 132.5 |
| 38 | 31.5 | | 88 | 73.0 | 49.2 | 38 | 114.4 | 77.2 | 88 | 155.9 | 105.1 | 38 | 197-3 | 133.1 |
| 39 | 32.3 | 21.8 | 89 | 73.8 | 49.8 | 39 | 115.2 | 77.7 | 89 | 156.7 | 105.7 | 39 | 198.1 | 133.6 |
| 40 | 33.2 | 22.4 | 90 | 74.6 | 50.3 | 40 | 116.1 | 78.3 | 90 | 157.5 | 106.2 | 40 | 199-0 | 134.2 |
| 41 | 34.0 | 22.9 | 91 | 75.4 | 50.9 | 141 | 116.9 | 78.8 | 191 | 158.3 | 106:8 | 300 | 248.7 | 167.8 |
| 42 | 34.8 | 23.5 | 02 | 76.3 | 51.4 | 42 | 117.7 | 79.4 | 92 | 159.2 | 107.4 | 400 | 331.6 | 223.7 |
| 43 | 35.6 | 34.0 | 93 | 77.1 | 52.0 | 43 | | 80.0 | 93 | | 197.9 | | 414-5 | 279.6 |
| | | 24.6 | 94 | 77.9 | 52.6 | 77 | 119.4 | 80.5 | 94 | 160.8 | 108.5 | 600 | 497-4 | 335-5 |
| 45 | | 25 2 | 95 | 78.8 | _ | 45 | 120.2 | - | | 161.7 | 109.0 | 700 | 580.3 | 391.4 |
| 46 | 38.1 | 25.7 | 96 | 79.0 | 53.7 | 146 | 121.0 | 81.6 | | 162.5 | 109.6 | 800 | 663,2 | 447-4 |
| 47 | 39,0 | 26.3 | 97 | 80.4 | 54.2 | 47 | 121.9 | 82.2 | 97 | 163.3 | 110.2 | 900 | 746.1 | 503.3 |
| | | 26.8 | 98 | 81.2 | 54.8 | | 122.7 | 82.8 | 98 | 164.1 | 110.7 | 1000 | 829.0 | 559.2 |
| | | 27.4 | | 82.1 | | 49 | 123.5 | 83.3 | 200 | | 111.8 | 3000 | | 1118.4 |
| Dia | Des | 28 o | | 82 9 | 55.9 | 150 | 124.4 | | | | _ | | 2487.0 | 1677.6 |
| - | Inch. | mat. | Ditt | Dep. | F15. | Dift | Dep. | Lat. | ווווען | Deb. | Lat. | Diff. | Dep. | Lat. |
| 1 | 1 | | - | | | | -6 D | arrea | | | | | | |

| ı | | - | | | | | - | 35 I | egre | es. | | | C 2 2 2 | and to the | |
|----|----------|------|------|-------|-----------|------|------|-------|-----------|-----|-------|-------|---------|------------|----------|
| ł | Dift | Lat. | Dep. | Dift | Lat. | Dep. | | | Dep. | | Lat. | Deo. | IDiA. | Lat. | Dep. |
| 1 | 275.5 | 00.8 | 00.6 | 51 | 41.8 | 29.2 | 101 | 82.7 | 57.9 | 151 | 123.7 | - | | 164.6 | - |
| 1 | 2 | 01.6 | 01.1 | 52 | 42.6 | 29.8 | 02 | 83.5 | 58.5 | 52 | 124.5 | | 02 | 165.4 | 115. |
| 1 | 3 | 02.5 | 01.7 | 53 | 43.4 | 30.4 | 03 | 84.4 | 59.1 | 53 | 125.3 | 87.7 | 02 | 166.3 | 116. |
| ì | 4 | 03.3 | 02.3 | 54 | 44.2 | 31.0 | 04 | 85.2 | 59.6 | 54 | 126.1 | 88 3 | 04 | 167.1 | 117. |
| ř | . 5 | 04.1 | 02.9 | 55 | 45.0 | 31.5 | 05 | 86.0 | 60.2 | 55 | 126.9 | 88.9 | 95 | 167.9 | 117. |
| ŀ | 6 | 04.9 | 03.4 | 56 | 45.9 | 32.1 | 106 | 86.8 | 60.8 | 156 | 127.8 | 89.5 | 206 | 168.7 | 118. |
| Ł | 7 8 | 05.7 | 04.0 | 57 | 46.7 | 32.7 | 07 | 87.6 | 61.4 | 57 | 128.6 | 90.0 | . 07 | 169.5 | 113. |
| 4 | 8 | | 04.6 | . 58 | 47.5 | 33.3 | 80 | 88.5 | 61.9 | 55 | 129-4 | 90.6 | 08 | 170 3 | 119. |
| | 9 | 07.4 | 05.2 | 59 | 48.3 | 33.8 | 09 | 89.3 | 62.5 | 59 | 130.2 | | | 171.2 | 119. |
| ĭ | 10 | 08.2 | 05.7 | 60 | 49.1 | 34.4 | 10 | 90.1 | 63.1 | 60 | 131.0 | - | .10 | 172.0 | 120. |
| ř | 11 | 09.0 | 06.3 | 61 | 50.0 | 35.0 | 111 | 90.9 | | 161 | 131.9 | | 211 | 172,8 | 121. |
| Š | 12 | 09.8 | 06.9 | 62 | 50.8 | 35.0 | 12 | 91.7 | 64.2 | 62 | 132.7 | 1 | 12 | 173.6 | 121. |
| - | 13 | 10.6 | 07.5 | 63 | 51.6 | 36.7 | 13 | 92.5 | | 63 | 133.5 | | | 174.4 | 122. |
| 1 | 14 | 11:5 | 08.6 | 64 | 52.4 | 37-3 | 14 | 93.4 | 66.0 | 64 | 134.3 | | 14 | 175.3 | 122. |
| - | 15 | 12.3 | - | - | 53.2 | _ | 15 | 94.2 | | 65 | | - | 15 | 176.1 | 123. |
| 3 | 16 | 13.1 | 09.2 | 66 | 54 1 | 37.9 | 116 | 95.0 | 66.5 | 166 | 136.0 | | 216 | 176.9 | 123. |
| - | 17 | 13.9 | 10.3 | 68 | 54.9 | 39.0 | 17 | 95.8 | 67.1 | 67 | 136.8 | | 17 | 177.7 | 124. |
| ı | 18 | 14.7 | 10.9 | 69 | 55.7 | 39.6 | 18 | 97.5 | 67.7 | 68 | 137.6 | | 18 | 178.5 | 125.0 |
| | 20 | 16.4 | 11.5 | 70 | 57.3 | 40.1 | 19 | 98.3 | 68.8 | 70 | 139.2 | | 19 | 180.2 | 126. |
| - | 21 | 17.2 | 12.0 | 71 | 58.1 | 40.7 | - | - | - | | - | - | - | 181.0 | - |
| | 21 | 18:0 | 12.6 | 72 | 59.0 | 41.3 | 12,1 | 99.1 | 69.4 | 171 | 140.0 | 1 200 | 221 | 181.8 | 126. |
| | 23 | 18.8 | 13.2 | 73 | 59.8 | 41.9 | 22 | 100.7 | 70.5 | 72 | 140.9 | | 22 | 182.6 | 127. |
| | 24 | 19.6 | 13.8 | 74 | 60.6 | 42.4 | 24 | 101.6 | 71.1 | 73 | 142.5 | | 23 | 183.5 | 128. |
| | 25 | 20.4 | | 75 | 61.4 | 43.c | 25 | 102.4 | 71.7 | 75 | 143.3 | 100.4 | 25 | 184.3 | 129.0 |
| 9 | 26 | 21.3 | 14.9 | 76 | 02.2 | 43 6 | 126 | 103.2 | 72.3 | 176 | 144.1 | 100.9 | 226 | 185.1 | 129. |
| | 27 | 22.1 | 15.5 | 77 | 63.1 | 44.2 | 27 | 104.0 | | 77 | 145.0 | | 220 | 185.9 | 130.2 |
| ž, | 28 | 22.9 | 10.1 | 78 | 63.9 | | 28 | 104.8 | 73.4 | 78 | 145.8 | 102.1 | 28 | 186 7 | 130.8 |
| | 29 | | 16.6 | 79 | 64.7 | 45.3 | 29 | 105.6 | 74.0 | 79 | 146.t | | 29 | 187-5 | 131. |
| - | 30 | | 17.2 | 80 | 65.5 | | 30 | 106.5 | 74.6 | 80 | 147.4 | | 30 | 188.4 | 131.0 |
| | 31 | 25.4 | 17.3 | 81 | 66.3 | 46.5 | 131 | 107.3 | | 181 | 148.2 | | 231 | 189.2 | 132. |
| 6. | 32 | 26.2 | 18.4 | 82 | 67.2 | 47.0 | 32 | 108.1 | 75-7 | 82 | 149.1 | 104.4 | 32 | 190.0 | 133. |
| | 33 | 27.0 | 18.9 | 83 | 68.0 | | 33 | 108.9 | 76.3 | 83 | 149.9 | 105.0 | 33 | 190.8 | 133 |
| | 34 | 27.8 | 19.5 | | 68.8 | | 34 | 109.7 | 76.8 | 84 | 150.7 | | 34 | 191.6 | 134.2 |
| | 35 | 28.7 | _ | 85 | - | 48.7 | 35 | 110.0 | 77.4 | 85 | 151.5 | 106.1 | 35 | 192.5 | 134. |
| | 30 | 29.5 | | 86 | | | 136 | 111.4 | 78.0 | 186 | 152.3 | 106 7 | 236 | 193-3 | 335-3 |
| | 3. | 30.3 | 21.2 | 87 | 71.3 | | 1 37 | 112.2 | 78.6 | 87 | 153.1 | 107.2 | 37 | 194.1 | 135.9 |
| | 38 | 31.1 | | 88 | 11,000 | | 38 | 113.0 | 1.5 50.00 | 88 | 154.0 | 107.8 | -38 | 194.9 | 136. |
| | 39 | 31.9 | 22.9 | 90 | Marie Co. | 51.6 | 39 | 113.8 | 79.7 | 89 | 154.8 | 108.4 | 39 | 195.7 | 137.1 |
| | 40 | 1 | - | - | - | - | 40 | - | | 90 | 155.6 | 109.0 | 40 | _ | 137. |
| | 41 | 33.6 | 23.5 | 91 | 74-5 | 52.2 | 141 | 115.5 | 80.9 | 191 | 156.4 | 109.5 | 300 | 245.8 | 172.1 |
| | 42 | 34.4 | 24.7 | 92 | 75.3 | 52.8 | 42 | 116.3 | 81.4 | 92 | 157.2 | 110.1 | 400 | 327.7 | 229.4 |
| | 43 | 36.0 | 25.2 | 93 | | 23.3 | 43 | 117.1 | 82.6 | 93 | 159.0 | 111.3 | 500 | 491.5 | |
| | 45 | 36.0 | 25.8 | 95 | 77.8 | 54.5 | 44 | 118.8 | 87.2 | | 159.7 | 111.8 | | 573.4 | 401.5 |
| | | 37.7 | | 06 | 78 6 | 55.1 | | | | | | - | 800 | | 458.9 |
| - | 46
47 | 3/·/ | 27.0 | 97 | 70.4 | 55.6 | 140 | 119.6 | 84.7 | 190 | 160.5 | 112.4 | | 655.3 | |
| N | 48 | 30.2 | 27.5 | 98 | 83.2 | 50.2 | 47 | 121.2 | 84.0 | 97 | 162.2 | 113.6 | 1000 | 819.1 | 570.6 |
| | 49 | 40.1 | 28.1 | 99 | 81.1 | 56.8 | 40 | 122.0 | 85.5 | 90 | 162.0 | 114.1 | 2000 | 1638.2 | 1141.3 |
| 1 | 50 | 41.0 | 28.7 | 100 | 81.9 | 57-4 | 150 | 122.8 | 86.0 | 200 | 163.8 | 114.7 | 2000 | 2457-3 | 1711.8 |
| 1 | Ditt | Dep. | Lat. | Dut | Dep. | Lat. | Dia | Dep. | | | Dep. | Lat. | Dift. | Dep. | Lat. |
| 1 | | | 1 | DATE. | | | | P. | - | | - al. | | - | 100 | 11.03.03 |

| - | 1 | | | | | | | 36 D | egre | es. | | 14 | | | |
|--------|-----|--------|--------------|----------|------|--------------|------|-------|--------------|----------|-------|-------|---------|--------|--------|
| Dep. | 7.0 | Lat. | Dep. | Diff | Lat. | Dep. | Dift | Lat. | Dep. | _ | Lat. | Dep. | ı Dıft. | Lata | Dep. |
| 115. | F | | 00.0 | 51 | 41.3 | 30.0 | 101 | 81.7 | 59.4 | 151 | 122.2 | 0.0 | 201 | 162.6 | 118.1 |
| 115. | | 1 | 01.2 | 52 | 42.1 | 30,6 | 02 | 82.5 | 60.0 | 52 | 123.0 | 89.3 | 02 | 163.4 | 118.7 |
| 115. | | 02-4 | 01.8 | 53 | | 31.2 | 03 | 83.3 | 60.5 | 53 | 123.8 | 89.9 | 93 | 164.2 | 119.3 |
| 117. | | 03.2 | 02.4 | 54 | 43.7 | 31.7 | 04 | 84.1 | 61.1 | 54 | 124.6 | | 04 | 165.0 | 119.9 |
| 117. | 13 | 04.0 | 02.9 | 55 | 44.5 | 32.3 | 05 | 84.9 | 61.7 | 55 | 125.4 | 91.1 | - 05 | 165.8 | 120.5 |
| 118. | | 1 | 03.5 | 56 | 45.3 | 32.9 | 106 | 85.8 | 62.3 | 156 | 126.2 | 91.7 | 206 | 166.7 | 121.1 |
| 113. | | 05.7 | 04.1 | 57 | 46.1 | 33.5 | 07 | 86.6 | 62.9 | 57 | 127.8 | | 07 | 167.5 | 121.7 |
| 119. | - 1 | 07.3 | 04.7 | 58 | 47.7 | 34-7 | 09 | 88.2 | 64.1 | 59 | 128.6 | 93.9 | 08 | 169.1 | 122.3 |
| 120. | 10 | 1 | 05.9 | 60 | 48.5 | 35.3 | 10 | 89.0 | 64.7 | 60 | 129 4 | 94.0 | 10 | 169.9 | 123.4 |
| 121. | 1 | | 06.5 | 61 | 49.3 | 35.9 | 111 | 89.8 | 65.2 | 161 | 130.2 | 94.6 | 211 | 170.7 | 124.0 |
| 121. | l r | | 07.1 | 62 | 50.2 | 36 4 | 12 | 90.6 | 65.8 | 62 | 131.1 | 95.2 | 12 | 171.5 | 124.6 |
| 122. | l i | | 07.6 | 63 | 51.0 | 37.0 | 13 | 91.4 | 65.4 | 63 | 131.9 | 95.8 | 13 | 172.3 | 125.2 |
| 122.7 | 1 | | 08.2 | 64 | 51.8 | 37.6 | 14 | 92.2 | 67.0 | 64 | 132.7 | 96.4 | 14 | 173.1 | 125.8 |
| 123. | 1 | | 08 8 | 65 | 52.6 | 38.2 | 15 | 93.0 | 67.6 | 65 | 133.5 | 97.0 | 35 | 173.9 | 126.4 |
| 123. | 11 | | 09.4 | 66 | 53.4 | 38.8 | 116 | 93.8 | 68.2 | 156 | 134-3 | 97.6 | 216 | 174-7 | 127.0 |
| 124. | 1 | | 10.0 | 68 | 54.2 | 39.4 | 17 | 94.7 | 68.8 | 67 | 135.1 | 98.2 | 17 | 175.6 | 127.6 |
| 125.0 | 2 | | 10.6 | 69 | 55.8 | 40.0 | 14 | 95.5 | 69.9 | 69 | 135.9 | 99.3 | 18 | 176.4 | 128.7 |
| 126. | 1 2 | 2.6 | 11.8 | 70 | 50.6 | 41.1 | 20 | 97.1 | 70.5 | 70 | 137.5 | 99.9 | 20 | 178.0 | 129.3 |
| 126. | 1 | | 12.3 | 71 | 57-4 | 41.7 | 121 | 97-9 | 71.1 | 171 | 138,3 | 100.5 | 221 | 178.8 | 129.9 |
| 127. | 1 2 | | 12.9 | 72 | 58.2 | 42.3 | 22 | 98.7 | 71.7 | 72 | 139.1 | 101.1 | 22 | 179.6 | 130.5 |
| 127. | 1 | | 13.5 | 73 | 59.1 | 42 9 | 23 | 99.5 | 72.3 | 73 | 140.0 | 101.7 | 23 | 180.4 | 131.1 |
| 128. | | | 14.1 | 74 | 59.9 | 43.5 | 24 | 100.3 | 72-9 | 74 | 140.8 | 102.3 | 24 | 181.2 | 131.7 |
| 129.0 | 2 | 10 2 | 14.7 | 75 | 60.7 | 44.1 | 25 | 101.1 | 73.5 | 75 | 141.6 | 102.9 | 25 | 182 c | 132.3 |
| 129.6 | 3 | | 15.3 | 76 | 61.5 | 44.7 | 126 | 101.9 | 74-1 | 176 | 142.4 | 103.5 | 226 | 182.8 | 132.8 |
| 130. | 3 | | 15.9 | 77 | 62.3 | 45.3 | 27 | 102.7 | 74.7 | - 77 | 143.2 | 104.0 | 27 | 183.6 | 1334 |
| 130.8 | 2 | | 16.5 | 78 | 63.1 | 45.8 | 28 | 103 6 | 75-2
75.8 | 78 | 144.8 | 104.6 | 28 | 184.5 | 134.0 |
| 131. | 3 | | 17.6 | 79
80 | 63.9 | 47.0 | 30 | 104.4 | 76.4 | 79
80 | 145.6 | 105.2 | 30 | 186.1 | 134.6 |
| 132. | 2 | 25.1 | 18.2 | 81 | 65.5 | 47.6 | 131 | 106.0 | 77.0 | 181 | 146.4 | 106.4 | 231 | 186.9 | 135.8 |
| 133.1 | 3 | | 18.8 | 82 | 06.3 | 48.2 | 32 | 106.8 | 77.6 | 82 | 147/2 | 107.0 | 32 | 187.7 | 136.4 |
| 133 | | 16.7 | 19.4 | 83 | 67.1 | 48.8 | 33 | 107.6 | 78.2 | 83 | 148.0 | 107.6 | 33 | 188.5 | 137.0 |
| 134.2 | 3 | 4 27.5 | 20.0 | 84 | 68.0 | 49.4 | 34 | 108.4 | 78.8 | 84 | 148.9 | 108.2 | 34 | 189.3 | 137-5 |
| 134. | 3 | | 20.6 | 85 | 63.8 | 50.0 | 35 | 109.2 | 79.4 | 85 | 149.7 | 108.7 | 35 | 1,00,1 | 138.1 |
| 135.3 | 3 | | 21.2 | 86 | 69.6 | 50.6 | 136 | 110.0 | 79.9 | 186 | 150.5 | 109.3 | 236 | 190.9 | 138.7 |
| 135.9 | 3 | | 21.7 | 87 | 70.4 | 51.1 | 37 | 110.8 | 80.5 | 87 | 151.3 | 109.9 | 37 | 191.7 | 139-3 |
| 137.1 | 3 | 30.7 | 22.3 | 88 | 71.2 | 51.7 | 38 | 111.6 | 81.1 | 88 | 152.1 | 110.5 | 38 | 192.5 | 139-9 |
| 137.6 | | | 23.5 | 89 | 72.0 | 52.3 | 39 | 112.5 | 82.3 | 90 | 153.7 | 111.7 | 39 | 193.3 | 140.5 |
| 172.1 | | 33.2 | 24.1 | 90 | | - | - | - | 82.9 | | 154.5 | 112.3 | 300 | 242.7 | 176.3 |
| 229.4 | | 34.0 | 24.7 | | 73.6 | 53.5 | 141 | 114.1 | | 191 | 155.3 | | 400 | 523.6 | 23511 |
| 286.8 | 4 | 34.8 | 25.3 | | 75.2 | | 42 | 115.7 | 84.1 | 93 | 156.1 | 113.4 | 500 | 404.5 | 293 9 |
| 344 7 | 4 | 4 35.6 | 25.9 | 94 | 76.0 | 55:3 | 44 | 116.5 | 84.6 | 94 | 156.9 | 1140 | 600 | 485.4 | 3.52.7 |
| 401.5 | 4 | 30.4 | 26.5 | 95 | 76.9 | 55.8 | 45 | 117.3 | 85.2 | 95 | 157.8 | 114.6 | 700 | 566.3 | 411.4 |
| 458.9 | 4 | 37.2 | 27.0 | | 77.7 | 56 4 | | 118.1 | 85.8 | 196 | 158.6 | 115.2 | 800 | 647.2 | 470.2 |
| 516.2 | 4 | 138.0 | 27.6 | 97 | 78.5 | 57.0 | 47 | 118.9 | 86.4 | 97 | 159.4 | 115.8 | 900 | 728.1 | 529 0 |
| 570.6 | | 38.8 | 28.2 | 98 | 70.2 | 57.6 | 48 | 119.7 | 87.0 | 98 | | 1164 | 1000 | 809.0 | 587.8 |
| 1711.8 | 100 | 140. | 28.8 | 99 | 80.1 | 58.2
58.8 | 49 | | 87.6 | 99 | | 117.6 | 3000 | 1618.0 | 1763.4 |
| Lat. | 6 | 40. c | 29.4
Lat. | | De- | | 150 | 121.3 | | | | 1.7.0 | Dift. | | Lat. |
| 1100 | | 1 che | andt. | Dift | Dep. | Lat | D.H | Dep. | Lat. | Dift | Dep. | LE | Ditt. | Dep. | Dat. |

| | | en ek | | 1 | | | 3 | 7 D | egree | 5. | | | | 3 | |
|-------|----------------------|--|------------|------|------|---|-------|--------|--------|----------|---------|----------|------------|---------------|--------------|
| Dill. | _ | Dep. | JDi | - | | Dep. | Dist | 100000 | Dep. | Dift | Late | Dep. | Dift. | Lat. | De |
| 1 | oc.8 | 00.6 | 5 | | 10.7 | 30.7 | 101 | 80.7 | 60.8 | 151 | 120.6 | 90.9 | 201 | 160.5 | 12 |
| 812 | 01,6 | 01.2 | 5 | 2 4 | 11.5 | 31.3 | 02 | 81.5 | 61.4 | 52 | 121.4 | 91.5 | 02 | 161.3 | 12 |
| 3 | 02.4 | 01.8 | 1 | × 1 | 42.3 | 31.9 | 03 | 82.3 | 62.0 | 53 | 122.2 | 92.1 | 03 | 162.1 | 123 |
| 254 | 03.2 | 1000000 | | | 43.1 | 32.5 | 04 | | 62.6 | 54 | 123.0 | 92.7 | 04 | 162.9 | 12 |
| _ 5 | 04.0 | 03.0 | 5 | 5 | 43.9 | 33.1 | 05 | 83.9 | 63.2 | 55 | 123.8 | 9343 | 05 | 163.7 | 12 |
| 6 | 04.8 | | | | 44.7 | 33.7 | 106 | 84.7 | 63.8 | 156 | 124.6 | 93-9 | 206 | 164.5 | 12. |
| 7 | 05.6 | District of the last of the la | | - | 45.5 | 34-3 | 07 | 85.5 | 65.0 | 57
58 | 125.4 | 94.5 | 97
08 | 165.3 | 124 |
| 8 | 06.4 | | | - c | 46.3 | 34.9 | 08 | 87.0 | 65.6 | | 127.0 | 95.1 | 09 | 166.9 | 12 |
| 10 | 08.0 | | | | 47-1 | 35.5 | 10 | 87.8 | 66.2 | 59
60 | 127.8 | 96.3 | 10 | 167.7 | 12 |
| - | - | - | -11- | - | 48.7 | 36.7 | - | 88.6 | 66.8 | 161 | 128.6 | 96.9 | 211 | 168.5 | 127 |
| 11 | 08.8 | | | - | 49.5 | 37.3 | 111 | 89.4 | 67.4 | 62 | 129.4 | 97.5 | 12 | 169.3 | 12 |
| 12 | 10.4 | | | - | 50.3 | 37.9 | 13 | 90.2 | 68.0 | 63 | 130.2 | 98.1 | 13 | 170.1 | 12 |
| 13 | 11.2 | | | | 51.1 | 38.5 | 14 | 91.0 | 68.6 | 64 | 131.0 | 98.7 | 14 | 170.9 | 12 |
| 15 | 12.0 | | | | 51.9 | 39.1 | 15 | 91.8 | 69.2 | 65 | 131.8 | 99.3 | 15 | 171.7 | 129 |
| 16 | 12.8 | | - 11 | - 1 | 52.7 | 39.7 | 116 | 92.6 | 69.8 | 166 | 132.6 | 99 9 | 216 | 172.5 | 130 |
| 1 17 | 13.6 | | 1 100 | 7 | 53.5 | 40.3 | 17 | 93.4 | 70.4 | 67 | 133.4 | 100.5 | | 173.3 | 130 |
| 1 18 | 14.4 | | | | 54.3 | 40.9 | 18 | 94.2 | 71.0 | 68 | 134.2 | 101.1 | 18 | 174.1 | 131 |
| 19 | 15.2 | A PERSON | 111 | 9 | 55.1 | 41.5 | 19 | 95.0 | 71.6 | 69 | 135.0 | 101.7 | 19 | 174-9 | 131 |
| 20 | 16.0 | | | 0 | 55-9 | 42.1 | 20 | 95.8 | 72.2 | 70 | 135.8 | 102.3 | 30 | 175.7 | 132 |
| 21 | 16.8 | 12. | 6 7 | | 56.7 | 42.7 | 121 | 96.6 | 72.8 | 171 | 136.6 | 102.9 | 221 | 176.5 | 133 |
| 22 | 17.6 | | | | 57.5 | | 22 | 97.4 | 73.4 | 72 | 137-4 | 103.5 | 22 | 177-3 | 133 |
| 23 | 18.4 | 13. | 8 7 | 3 | 58.3 | 43.9 | 23 | 98.2 | 74.0 | 73 | 138.2 | 104.1 | 23 | 178.1 | 134 |
| 34 | 19.2 | 14. | 4 7 | 4 | 59.1 | 44.5 | 24 | 99.0 | 74.6 | 74 | 139-0 | 104-7 | | 178.9 | 134 |
| 25 | 20.0 | 15. | 0 7 | 15 | 59-9 | | 25 | 99.8 | 75.2 | 75 | 139.8 | 105.3 | | 179.7 | 139 |
| 26 | 20. | 8 15. | 6 7 | 6 | 60.7 | | 126 | 100.6 | 75.8 | 176 | 140.6 | 105.9 | | 180.5 | 136 |
| 25 | 21. | | | 77 | 61.5 | | 27 | 101.4 | 76.4 | 77 | 141.4 | 106.5 | | 181.3 | 130 |
| 2 | 22. | • | | 8 | 62.3 | 100000000000000000000000000000000000000 | 28 | 102.2 | 77.0 | 78 | 142.2 | 107.1 | | 182.1 | 137 |
| 129 | | | 5 2 | 79 | 63.1 | 47.5 | 29 | 103.0 | 77.6 | 79 | 142 9 | 107.7 | | 183.7 | 138 |
| 30 | | _ | _ _ | 0 | 63.9 | 48.1 | 30 | 103.8 | | - | 143.7 | | | 184.5 | |
| 1 3 | 24. | | | 1 | 64.7 | | 131 | 104.6 | | 181 | 144.5 | A COLUMN | | 185.3 | 139 |
| 1 3 | | | 311 | 32 | 65.5 | 1.00 | 32 | 105.4 | | | 145.3 | | | 186.1 | 140 |
| 3 | Contract of the last | | 2 H | 84 | 66.3 | 10.0 | 33 | 106.2 | 10 0 | | | | | 186.9 | 140 |
| 1 3 | | | 3 | 85 | 67.9 | 50.6 | 34 | 107.8 | | 85 | | | | 187.7 | 141 |
| 3 | - | _ | -11- | 86 | 68.7 | | 136 | 108.6 | | 186 | | | - | 188.5 | 142 |
| 3 | | | 7 11 | 87 | 69.5 | | 37 | 109.4 | | | | | | 189.3 | 142 |
| 1 3 | | | 211 | 88 | 70.3 | | 38 | 110.2 | W / 2 | | 1 | | | | |
| 3 | | | 7 | 89 | 71,1 | 133 | 39 | 111.0 | 10 0 | | 1 - 2 | | | 190.9 | |
| 1 4 | | | - 11 | 90 | 71.9 | | 40 | 111.8 | | | | | | | |
| 14 | | | | 91 | 200 | | 141 | 112.6 | 84.9 | 191 | 152. | 114.9 | 300 | 239. | 180 |
| - | 2 22. | c 25 | | 92 | 73.5 | 155.4 | 1 42 | 113.4 | 85.5 | 92 | 153. | 115. | 400 | 319-4 | 240 |
| 1 7 | 2 34 | 3 25 | .ol | 93 | 74.3 | \$6.0 | 1 43 | 114.2 | 186.1 | 1 93 | 154.1 | 110. | 500 | | 300 |
| | 4 35. | 1 26 | -511 | 94 | 75. | 150.0 | 44 | 115.0 | 86.7 | 94 | 154.9 | 110. | 7 000 | | 411 |
| | 5 35 | 9 27 | .1 | 95 | 75.0 | 57.2 | 11 45 | 115- | | | 155. | 117. | | | |
| 14 | 6 26. | 7 27 | 7 | 96 | 76.7 | 57.8 | 146 | 116. | 6 87.0 | 119 | 5 I 56. | 117. | 800 | | 481 |
| | 7 27. | 5 28 | . 3 1 | 97 | 77-5 | 58.4 | 47 | 117. | 1 88. | 9 | 7 1 57. | 2 1118. | 6 900 | 718. | 541
6 601 |
| 1 4 | 8 38. | 3 28 | .9 | 98 | 78.1 | 1 59 0 | 11 42 | 118. | 2 89. | · II • | 158. | 1 119 | 2 1000 | 790. | |
| 4 | 9 39. | 1 29 | .51 | 99 | 79-1 | 59 6 | | 119. | 0 89. | 9 | 9 158. | 9 119. | 4 11 2 0 0 | 1597 | 0 1 200 |
| | 0 39. | | . 1 1 | 00 | 74.9 | 60.2 | 150 | 119. | 90. | 20 | 159. | 120. | 1 300 | 2395.
Dep. | Lat |
| Di | | p. La | t. ID | hift | Dep | Lat. | Dif | t Dep. | Lat | . IIDi | ft Dep. | Lat. | II DIE | . Dep. | - |

| | | | | | | 38 L |)egre | es. | S |
|------|------|------|------|------|------|----------------------|-------|-----|----|
| Let. | Dep. | Dift | Lat. | Dep. | Dift | Lat. | Dep. | Dif | L |
| 00.8 | 00.6 | 51 | 40.2 | 31.4 | 101 | 79.6 | 62.2 | 151 | 11 |
| 01.6 | 01.2 | 52 | 41.0 | 32.0 | 02 | 79.6
80.4
81.2 | 62.8 | 52 | 11 |
| 03.4 | 01.0 | 23 | 4 | 32.0 | 1 03 | 01.2 | 3.4 | 53 | |

| ю. | | | - | | - | | | 0 | | | | | 140 | |
|------|-------|--|------|--------------|------|-----|-------|------|------|-------------|-------|----------|--------|-------------------|
| 14 | - | Dep. | Dif | Lat. | Dep. | Dif | | Dep. | DiA | Lat. | Dep. | 11 Dift | Lat. | Dep. |
| - | 00.8 | 00.6 | 51 | 40.2 | | 101 | 79.6 | 62.2 | 151 | 119.0 | | 201 | - | 123.8 |
| a | 01.6 | 01.2 | 52 | | | 02 | 80.4 | 62.8 | 52 | 119.8 | | 0 | | |
| П | 02.4 | 01.8 | 53 | | 1- | 03 | | | 53 | 120.5 | 94.2 | 01 | | |
| k | 03.2 | 02.5 | 54 | | | | | | 54 | 121.3 | 94.8 | 04 | 160. | 125.6 |
| 5 | 03-9 | 03.1 | 55 | | | 05 | | 64 6 | 55 | 122.1 | 95.4 | 05 | 161. | 126.2 |
| 1 | 04.7 | 03.7 | 1 56 | 44.1 | 34.5 | 106 | | 65.3 | 156 | 122.9 | 96.0 | 206 | 162. | 126.8 |
| 1 | 05.5 | | 57 | 44.9 | 35.1 | 07 | 84.3 | 65.9 | 57 | 123.7 | 96.7 | 07 | 163.1 | 127.4 |
| E | 06.3 | 04.9 | 58 | | | 08 | | 66.5 | 58 | 124.5 | 97-3 | 08 | 163.0 | 128.1 |
| | 07:1 | 05.5 | 59 | | 36.3 | 09 | 85.9 | 67.1 | 59 | 125.3 | 97.9 | 09 | 164.7 | 128.7 |
| 10 | 07.9 | 06.2 | 60 | | | 10 | | 67.7 | - | 126.1 | 98.5 | 10 | 165.5 | 129.3 |
| Ī, | 08.7 | 06.8 | 61 | | 37.0 | III | | 68.3 | 161 | 126.9 | 99.1 | 211 | 166.2 | 129.9 |
| 12 | 09.5 | | 62 | | 38.2 | 12 | | 69.0 | 62 | 127.6 | 99.7 | 12 | 167.0 | 130.7 |
| 13 | 10.2 | 08.0 | 63 | | 1- | 13 | | 69.6 | 63 | 128.4 | 100.4 | 13 | 167.8 | 131.1 |
| 4 | 11.8 | 08.6 | 64 | | 10 | 14 | 89.8 | 70.2 | 64 | 129.2 | 101.0 | 14 | 168.6 | 131.8 |
| 15 | _ | 00.2 | | | - | 15 | 90.6 | 70.8 | 65 | 130.0 | 101.6 | 15 | 169. | 132 4 |
| 100 | 12 6 | 09.9 | 66 | | | 116 | 91.4 | 71.4 | 106 | 130.8 | 102.2 | 216 | 170.2 | 133.0 |
| 17 | 13-4 | 10.5 | 68 | | | 17 | 92.2 | 72.0 | 67 | 131.6 | 102.8 | 17 | 171.0 | 133 6 |
| | 14.2 | 11.1 | 69 | 100 | | 18 | 93.0 | 72.7 | 68 | 132.4 | 103.4 | 18 | 171.8 | 134.2 |
| 66 | 15.0 | 11.7 | 70 | | | 19 | 93 8 | 73.3 | 69 | 133.2 | 104.1 | 19 | 172.5 | 134.8 |
| | - | _ | _ | | - | - | 94.5 | 73.9 | 70 | 133 9 | 104.7 | 20 | 173.3 | 135.5 |
| 80 | 16.5 | 12.9 | 71 | | | 121 | 95.3 | 74.5 | 171 | 134.7 | 105.3 | 221 | 174-1 | 136.1 |
| | 17.3 | 13.5 | 72 | | 1 | 22 | 96.1 | 75.1 | 72 | 135.5 | 105.9 | 22 | 174.9 | 136.7 |
| 23 | 18.0 | 14.2 | 73 | | | 23 | 96.9 | 75.7 | 73 | 136.3 | 106.5 | 23 | 175.7 | 137.3 |
| 1778 | 19.7 | 15.4 | 75 | 39.1 | 46.2 | 24 | 97.7 | 77.0 | 74 | 137.1 | 107.1 | 24 | 176.5 | 137.9 |
| -1 | 20.5 | 16.0 | 76 | | 46.8 | | _ | | 75 | 137.9 | | 25 | 177.3 | 138.5 |
| | 21,3 | 16.6 | 70 | 59.9 | | 126 | 99-3 | 77.6 | 176 | 138.7 | 108.4 | 226 | 178.1 | 139.1 |
| me g | 12.1 | 17.2 | 78 | 61.5 | 47.4 | 27 | 100 1 | 78.8 | 77 | 139-5 | 109.0 | 27 | 178.9 | 139.8 |
| 29 | 22.9 | 17.9 | 79 | 62.2 | 0 4 | 29 | 101.6 | 79-4 | 78 | 140.2 | 109.6 | 28 | 179.6 | 140.4 |
| | 13 6 | 18.5 | 80 | 63.c | 49.3 | 30 | 102.4 | 80.0 | 79 | 141.8 | 110.8 | 29 | 180.4 | 141.0 |
| -1 | 4.4 | 19.1 | 81 | 63.8 | 49 9 | - | | 80.7 | 181 | The same of | - | 30 | | 141.6 |
| 92 2 | 5.2 | 19.7 | 82 | 64.6 | 50.5 | 131 | 103.2 | 81.3 | 82 | 142.6 | 111.4 | 231 | 182.0 | 142.2 |
| 27 2 | | 20 3 | 83 | 654 | 51.1 | 32 | 104.8 | 81.9 | 83 | 143.4 | 112.7 | 32 | 182.8 | 142.8 |
| "] : | | 20.9 | 84 | 66.2 | 51.7 | 34 | 105.6 | 82.5 | 84 | 144.2 | 113.3 | 33 | 184.4 | 143.5 |
| 678 | | 21.5 | 85 | 67.0 | :2.3 | 35 | 106.4 | 83.1 | 85 | 145.8 | 113.9 | 34 | 185.2 | 144.7 |
| 6 2 | 4 | 22.2 | 86 | 67.8 | 53.0 | 136 | | 83.7 | 186 | 146.5 | - | | | |
| 7 2 | | 22.8 | 87 | 68.5 | 53.6 | 37 | 107.2 | 84.4 | 87 | 147.3 | 114.5 | 236 | 185.9 | 145.3 |
| | 4 | 23.4 | 88 | 69.3 | 54.2 | 38 | 108.7 | 85.0 | 88 | 148.1 | 115.8 | 37
38 | 187.5 | 145.9 |
| | 2 | 240 | 89 | 70.1 | 54.8 | 39 | | 85.6 | 89 | 148.9 | 116.5 | 39 | 188.3 | 147.2 |
| | | 24.6 | 90 | 709 | 55.4 | 40 | | 86.2 | 90 | 149.7 | 117.0 | 40 | 189.1 | 147.8 |
| | | 25.2 | 91 | 71.7 | 66.0 | 141 | | 86.8 | 191 | 150.5 | 117.6 | 300 | 236 4 | 184.7 |
| 2 3 | 4 2 1 | 25.9 | 92 | 72.5 | 56.6 | 42 | | 87.4 | 92 | 151.3 | 118.2 | 400 | | 246.3 |
| 3 3 | 3.9 | 26.5 | 93 | 73.3 | | 43 | 112.7 | 88.0 | | 152.1 | 18.81 | 500 | 315.2 | 307.8 |
| 4 34 | 4-7 | 27.1 | 94 | | 57.9 | 44 | 113.5 | 88.7 | | | 119.4 | 600 | 472 8 | 369.4 |
| 5 3 | 5.5 | 27.7 | 95 | 74.9 | 58.5 | 45 | 114.2 | 89.3 | 95 | 153.6 | 120.1 | 700 | 551.6 | 431.0 |
| 30 | 5 2 | 18.2 | 96 | 75.6 | 50.1 | 146 | 1150 | | | | 120.7 | 800 | 630.4 | The second second |
| 37 | 1.0 | 28.9 | 97 | 76.4 | 59.7 | 47 | 115.8 | 90.5 | 97 | | 121.3 | 900 | 709.2 | 492.5 |
| 37 | 1.8 | 29.6 | 98 | 76.4
77.2 | 00 3 | 48 | 116.6 | 91.1 | 98 | 156.0 | 121.0 | 1000 | 788.0 | |
| 38 | 1.6 | 0.2 | 99 | 78.0 | 61.0 | | | 91.7 | 99 | | 122.5 | 2000 | 1576.0 | |
| 39 | 1.4 | 27.1
27.7
18.3
18.9
29.6
30.2
30.8 | 100 | 788 | 61.6 | 150 | | | 200 | | 123.1 | | 2364.0 | 1847.1 |
| 1D | p. 1 | at. | Dift | Jep. | Lat. | | Dep. | Lac | Diff | Dep. | Lat. | Dift. | Dep. | Lat. |
| | 100 | - | 1 | - | | | F. P | - 4 | | - P. | | 11140 | | 1 |

| der IV | La Striege | | | | - |
|--------|------------|-----|-----|--|---|
| 20 | D | orr | ope | | |

| | 4 | 1 | 10 | | 7 | : | 39 D | egree | 25. | | 1 | | | |
|-------|------|------|----------|------|--------------|-----|-------|---------------|----------|--------|-------|-------|--------|-------------|
| Dift | | Dep. | Dut | | Dep. | Dit | | Dep | Dift | Lat. | Dep. | Ditt. | Lat. | De |
| y 1 | 00.8 | 00.6 | 51 | 39.6 | 32.1 | 101 | 78.5 | 63.6 | 151 | 117.3 | 95.0 | 201 | 156.2 | 12 |
| 2 | 01.6 | 01.3 | 52 | 40.4 | 32.7 | 02 | 79.3 | 64.2 | 52 | 118.1 | 95.7 | 02 | 157.0 | 127 |
| 3 | 02.3 | 01.9 | 53 | 41.2 | 33.4 | 03 | 80.0 | 64:8 | 53 | 118.9 | 96.3 | 03 | 157.8 | 127 |
| 4 | 03.1 | 02.5 | 54 | 42.0 | 34.0 | 04 | 80.8 | 66.1 | 54 | 119.7 | 96.9 | 04 | 158.5 | 128 |
| 5 | 03.9 | 03.1 | 55 | 42.7 | 34.6 | 05 | | | 55 | 120.5 | 97.5 | 05 | 159.3 | 129 |
| 6 | 04.7 | 03.8 | 56 | 43.5 | 35.2 | 106 | 82.4 | 06.7 | 156 | 121.2 | 98.2 | 206 | 160.1 | 120 |
| 7 8 | 05.4 | 04.4 | 57 | 44.3 | 35.9 | 08 | 83.1 | 67.3 | 57 | 122.0 | 98.8 | 07 | 160.9 | 130 |
| 13.00 | 07.0 | 05.0 | 58 | 45.1 | 36.5 | - | 83.9 | 68.6 | 58 | 122.8 | 99.4 | 08 | 161.6 | 130 |
| 9 | 07.8 | 05.7 | 59
60 | 46.6 | 37.8 | 10 | 85.5 | 69.2 | 59
60 | 123.6 | 100:1 | 09 | 162.4 | 131 |
| 10 | 08.5 | 06.9 | 61 | _ | 38.4 | - | 86.3 | | - | | 100.7 | 10 | 163.0 | 132 |
| 11 | 09.3 | 07.6 | 62 | 47.4 | 39.0 | 111 | 870 | 70.5 | 161 | 125.1 | 101.3 | 211 | 164.0 | 132 |
| 12 | 10.1 | 08.2 | 63 | 49.0 | 39.6 | 13 | 87.8 | 71.1 | 62 | 125.9 | 101.9 | 12 | 164.7 | 133 |
| 13 | 10.9 | 08.8 | 64 | 49.7 | 40.3 | 14 | 88.6 | 71.7 | 64 | 127.4 | 103.2 | 13 | 165.5 | 134 |
| 14 | 11.7 | 09.4 | 6; | 50.5 | 40.9 | 15 | 89.4 | 72.4 | 65 | 128.2 | 103.8 | 14 | 167.1 | 134 |
| 16 | 12.4 | 10.1 | 66 | 51.3 | 41.5 | 116 | 90.1 | 73.0 | 166 | - | - | 15 | 167.9 | 135 |
| 3 000 | 13.2 | 10.7 | 67 | 52.1 | 42.2 | 17 | 90.9 | 73.6 | 67 | 129.0 | 104.5 | 216 | 163.6 | 135 |
| 17 | 14.0 | 11.3 | 68 | 52.8 | 42.8 | 18 | 91.7 | 74.3 | 68 | 130.6 | 105.7 | 17 | 169.4 | 136. |
| 19 | 14.8 | 12.0 | 69 | 53.6 | 43.4 | 19 | 92.5 | 74.9 | 69 | 131.3 | 106.4 | 19 | 170.2 | 137. |
| 20 | 15.5 | 11.6 | 70 | 54.4 | 44.1 | 20 | 93.3 | 75.5 | 70 | 132.1 | 107.0 | 20 | 171.0 | 138. |
| 21 | 16.3 | 13.2 | 71 | 55.2 | 44.7 | 121 | 94.0 | 76.1 | 171 | 132.9 | 107.6 | - | 171.7 | 139. |
| 22 | 17.1 | 13.8 | 72 | 56.0 | 45.3 | 22 | 94.8 | 76.8 | 72 | 133.7 | 108.2 | 221 | 172.5 | 139 |
| 23 | 17.9 | 14.5 | 73 | 56.7 | 45.9 | 23 | 95.6 | 77.4 | 73 | 134.4 | 108.9 | 23 | 173.3 | 140 |
| 24 | 18.7 | 15.1 | 74 | 57.5 | 46.0 | 24 | 96.4 | 78.0 | 74 | 135.2 | 109 5 | 24 | 174.1 | 141. |
| 25 | 19.4 | 15.7 | 75 | 58.3 | 47.2 | 25 | 97 1 | 78.7 | 75 | 136 0 | 110.1 | 25 | 174.8 | 141. |
| 26 | 20.2 | 16.4 | 76 | 59.1 | 47.8 | 126 | 97.9 | 79-3 | 176 | 130.8 | 110.8 | 226 | 175.6 | 142. |
| 27 | 21.0 | 17.0 | 77 | 59.8 | 48.5 | 27 | 98.7 | 79.9 | 77 | 137.5 | 111.4 | 27 | 176.4 | 142. |
| 28 | 21.8 | 17.6 | 78 | 60.6 | 49.1 | 28 | 99.5 | 80.6 | 78 | 1 38.3 | 112.0 | 28 | 177.2 | 143. |
| 29 | 22.5 | 18.2 | 79 | 61.4 | 49.7 | 29 | 100.2 | 81.2 | 79 | 139.1 | 112.6 | 29 | 178.0 | 144- |
| 30 | 23.3 | 18 9 | 80 | 62.2 | 50.3 | 30 | 101.0 | 81.8 | 80 | 139.9 | 113.3 | 30 | 178.7 | 144. |
| 31 | 24.1 | 19.5 | 81 | 62.9 | 51.0 | 131 | 101.8 | 82.4 | 181 | 140.7 | 113.9 | 231 | 179.5 | 145. |
| 32 | 24.9 | 20.1 | 82 | 63.7 | 51.6 | 32 | 102.6 | 83.1 | 82 | 141.4 | 114.5 | 32 | 180.3 | |
| 33 | 25.6 | 20.8 | 83 | 64.5 | 52.2 | 33 | 1034 | 83.7 | 83 | 142.2 | 115.2 | 33 | 181.1 | 146. |
| 34 | 26.4 | 21.4 | 84 | 65.3 | 52.9 | 34 | 104.1 | 84.3 | 84 | 143.0 | 115.8 | 34 | 181.8 | |
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| 37 | 28,8 | 23.3 | -87 | 67.6 | 54.7 | 37 | 106.5 | 86.2 | 87 | 145.3 | 117.7 | 37 | 184.2 | 149 |
| 38 | 29.5 | 23.9 | 88 | 69.2 | 55.4 | 38 | 107.2 | 86.8 | 88 | 146.1 | 118.3 | 38 | 185.7 | 149 4 |
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| 41 | 31.9 | 25.8 | 91 | 70.7 | 57-3 | 141 | 109.6 | 88.7 | 191 | 148.4 | 120.2 | 300 | 310.9 | |
| 42 | 32.6 | 27.1 | 92 | 71.5 | 57·9
58·5 | 42 | 111.1 | 89.4 | 92 | 149.2 | 120.8 | 400 | 388.6 | 314-7 |
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| 38 28.7 24.9 88 60.4 57.7 38 104.2 90.5 88 141.9 123.3 38 179.6 15 39 29.4 25.6 89 67.2 58.4 39 104.9 91.2 89 142.6 124.0 39 180.4 15 41 30.2 26.2 96 67.9 59.0 40 105.7 91.8 90 143.4 124.6 40 181.1 15 42 31.7 27.6 92 69.4 60.4 42 107.2 93.1 92 144.9 125.9 400 301.9 26 43 32.5 28.2 93 70.2 61.0 43 107.9 93.8 93 145.7 126.6 500 377.4 32 44 33.2 28.9 94 70.9 61.7 44 108.7 94.5 94 146.4 127.3 600 452.8 39 45 34.5 71.7 62.3 45 109.4 95.1 95 | 37 | | 24.3 | | | | 37 | | 89.9 | | 141.1 | 122.7 | 37 | 178.9 | 155 |
| 39 29.4 25.6 39 67.2 56.4 39 104.6 91.2 89 142.6 124.6 39 180.4 155 40 181.1 155 40 | | | | | | | | | | | | | 38 | 179.6 | 156 |
| 41 30.9 26 9 91 68.7 59.7 141 106.4 92.5 191 144.2 125.3 300 226.4 194 2 31.7 27.6 92 69.4 60.4 42 107.2 93.1 92 144.9 125.9 400 301.9 264 43 32.5 28.2 93 70.2 61.0 43 107.9 93.8 93 145.7 126.6 500 377.4 324 34.0 29.5 95 71.7 62.3 45 109.4 95.1 95 147.2 127.9 700 528.3 45 46 34.7 30.2 96 72.5 63.0 146 110.2 95 8 196 147.9 128.6 800 603.8 52 47 35.5 30 8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59 48 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 56 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | 39 | | | | | 50.4 | | | | | | | 39 | | 156 |
| 42 31.7 27.6 92 69.4 60.4 42 107.2 93.1 92 144.9 125.9 400 301.9 264.4 33.2 28.9 94 70.9 61.7 44 108.7 94.5 94 146.4 127.3 600 452.8 39.4 34.0 29.5 95 71.7 62.3 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 34.7 30.2 96 72.5 63.0 146 110.2 95.8 196 147.9 128.6 800 603.8 52.4 35.5 30.8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59.4 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65.4 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131.5 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | 40 | 1- | | - | | _ | _ | 105.7 | _ | 90 | 143-4 | | | | 157 |
| 43 32.5 28.2 93 70.2 61.0 43 107.9 93.8 93 145.7 126.6 500 377.4 325.4 33.2 28.9 94 70.9 61.7 44 108.7 94.5 94 146.4 127.3 600 452.8 39.4 34.0 29.5 95 71.7 62.3 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45.7 35.5 30.8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59.4 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65.4 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131.5 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | | 30.9 | 20 9 | | | | | 1224 | - | | | | 300 | | 196 |
| 44 33.2 28.9 94 70.9 61.7 44 108.7 94.5 94 146.4 127.3 600 452.8 39.4 34.0 29.5 95 71.7 62.3 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45 109.4 95.1 95 147.2 127.9 700 528.3 45.4 45 110.9 96.4 97 148.7 129.2 900 679.2 59.4 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65.4 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131.5 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | | 32.7 | 28.2 | 92 | 70.4 | 61.0 | | | | | | | | | 202 |
| 4: 34.0 29 5 95; 71.7 62.3 45 109.4 95.1 95 147.2 127.9 700 528.3 45; 46 34.7 30.2 9 71.5 63.0 146 110.2 95 8 196 147.9 128.6 800 603.8 52 47 35.5 30 8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59 48 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 50 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | | 32.2 | 28.0 | 93 | 70.0 | 61.7 | | 107.9 | | | 145.7 | | 3 | 377.4 | |
| 46 34.7 30.2 9 71.5 63.0 146 110.2 95 8 196 147.9 128.6 800 603.8 52.47 35.5 30 8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59 48 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 50 37.7 32.8 100 75.4 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | | | 20.5 | | 71.7 | 62.2 | | | | | | | | 452.0 | |
| 47 35.5 30 8 97 73.2 63.6 47 110.9 96.4 97 148.7 129.2 900 679.2 59 48 36.2 31.5 98 74.0 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 50 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | | | | | _ | | _ | | | - | - | - | _ | _ | |
| 48 36.2 31.5 98 74.6 64.3 48 111.7 97.1 98 149.4 129.9 1000 754.7 65 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 50 37.7 32.8 100 75.4 65.6 150 113.2 98.4 200 150.6 131.2 3000 2264.1 196 | 40 | 34.7 | 20 8 | | 72.3 | 62.6 | | | | | | | | 670.0 | |
| 40 37.0 32.1 99 74.7 64.9 49 112.5 97.7 99 150.2 130.5 2000 1509 4 131 50 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.0 131.2 3000 2264.1 196 | | 36.2 | | | | | | | | 97 | | | | | 656 |
| 51 37.7 32.8 100 75.5 65.6 150 113.2 98.4 200 150.0 131.2 3000 2264.1 196 | | | 32.1 | | | | 40 | 112.5 | | | | | | 1500 4 | 1312 |
| | | | | | 75.4 | 65.6 | 150 | 117.2 | 98.4 | | 150.0 | | 3000 | 2264.1 | 1968 |
| The land of land land land land land land | | - | | Dift | Dep. | Lat | | | _ | | | _ | | | Lat |
| | 11 | 1 | | | F | | - | | | 101111 | 200 | | II Dill | op. | |

| | 11.4-1 | | | | | 42 I |)egree | s. | | 9 (5) | | 1 10 | |
|---|--------|----------|------|--------------|-----|--------------|--------------|----------|-------|-------|-------|----------------|--------|
| 144 APP. Dift Lat. Dep. Dift Lat. Dep. Dift Lat. Dep. Dift. Dep. Dift. Dep. Dift. Dep. Dift. Dep. Dep. Dift. Dep. Dep. | | | | | | | | | | | | | Dep. |
| 100.7 | | 51 | 37 9 | 34.1 | | 75.0 | 67.6 | | | | 44 | | 134-5 |
| 101.5 | 01.3 | 52 | 38.6 | 34.8 | 02 | 75.8 | 68.9 | 52 | | | 02 | 1 - 0 | 135.1 |
| 102.2 | 02.0 | 53 | 39.4 | 35.5
36 I | 03 | 76.5 | 69.6 | 53 | 113.7 | 102.4 | 03 | | 135.8 |
| 03.0 | 02.7 | 54
55 | 40.0 | 36.8 | 05 | 780 | 70.2 | 55 | 115.1 | 103 7 | 05 | 1 | 137.1 |
| 503.7 | | | 41.0 | 37.5 | 100 | 78.7 | 70.9 | 156 | 115.9 | 104.4 | 206 | | 137.8 |
| 04.5 | 04.0 | 56 | 42.3 | 38.1 | 07 | 79.5 | 71.6 | 57 | 116.6 | 105.0 | 07 | 153.8 | 138.5 |
| 105.2 | 05.4 | 58 | 43.1 | 38.8 | 08 | 80 2 | 72.3 | 58 | 117.4 | 1057 | 08 | 154.5 | 139.1 |
| 06.7 | 06.0 | 59 | 43.8 | 39.5 | 09 | 81.0 | 72-9 | 59
60 | 118.1 | 106.4 | 09 | 155.3 | 139.8 |
| 11 08 2 | 06.7 | 60 | 44.6 | 40.1 | 10 | 81.7 | 73.6 | 60 | 118.9 | 107.0 | 10 | 156.0 | 140.5 |
| 11 08 2 | 07.4 | 61 | 45.3 | 40.8 | 111 | 82.5 | 74.3 | 161 | 119.6 | 107.7 | 211 | 156.7 | 141.2 |
| 2 08.9 | 08.0 | 62 | 40.1 | 41.5 | 12 | 83.2 | 74.9 | 62 | 120.3 | 108.4 | 12 | 157.5 | 141.8 |
| 13 09-7 | 08.7 | 63 | 46.8 | 42.1 | 13 | 83.9 | 75.6 | 63 | 121.1 | 109.0 | . 13 | | 142.5 |
| 14 10.4 | 09.4 | 64 | 47.5 | 42 8 | 14 | 84.7 | 76.3
76.9 | 64 | 121.8 | 109.7 | 14 | 159.0 | 143.2 |
| 19 11 1 | 10.0 | 65 | | 43.5 | 15 | 85.4 | | | - | | 15 | | |
| 11.9 | 10.7 | | 49.0 | 44.8 | 116 | 86.2
86.9 | 77.6 | 166 | 123.3 | 111.7 | 216 | 160.5 | 144.5 |
| 17 12.6 | 11.4 | 68 | 50.5 | 45.5 | 17 | 37.7 | 78.9 | 68 | 124.8 | 112.4 | 17 | 161.9 | 145.2 |
| 13.4 | 12.7 | 69 | 51.3 | 46.2 | 19 | 88.4 | 79.6 | 69 | 125.5 | 113.1 | 19 | 162.7 | 146.5 |
| 13 13 4
19 14 1
10 14 9
11 15 6 | 134 | 70 | 52.0 | 46.8 | 20 | 89.1 | 80.7 | 70 | 126 3 | 113.7 | 20 | 163.4 | 147.3 |
| 11:6 | 14.0 | 71 | 52.7 | 47.5 | 121 | 89.9 | 80.9 | 171 | 127.0 | 114.4 | 221 | 164.2 | 147.8 |
| 12 16.3 | 14.7 | 72 | 53.5 | 48.2 | 22 | 90.6 | 81.6 | 72 | 127.8 | 115.1 | 22 | 164.9 | 148.5 |
| 13 17.1 | 15.4 | 73 | 54.2 | 48.8 | 23 | 91.4 | 82,3 | 73 | 128.5 | 115.7 | 23 | 165.7 | 149.2 |
| 14 17.8 | 16.1 | 74 | 55.0 | 49.5 | 24 | 92.1 | 83.0 | 74 | 129 3 | 116.4 | 24 | 166.4 | 149.9 |
| 15 18.6 | 16.7 | 75 | 55.7 | 50.2 | 25 | 92.9 | 83.6 | 75 | 130.0 | 117.1 | 0,25 | 167.1 | 150.5 |
| 16 19-3 | 17.4 | 70 | 56 5 | 50.8 | 126 | 93.6 | 84.3 | 176 | 130.7 | 117.7 | 226 | 167.9 | 151.2 |
| 27 20 1 | 18.1 | 77 | 57.2 | 51.5 | 27 | 94.3 | 85.0 | 77 | 131.5 | 118.4 | 27 | 168.6 | 151.9 |
| 25 20.5 | 18.7 | 78 | 57.9 | 52.2 | 28 | 95.1 | 85.6 | 78 | 133.2 | 119.1 | 28 | 169.4 | 152.5 |
| 19 21.5 | 19.4 | 79
80 | 59.4 | 53.5 | 29 | 95.8 | 87.0 | 79 | 133.7 | 120.4 | 30 | 170.9 | 153.2 |
| p 22.3 | - | 81 | 60.2 | 54.2 | 30 | | 87.6 | 181 | 134.5 | 121.1 | 231 | 171.6 | 154.5 |
| 11 23.0
12 23.8 | 20.7 | 82 | 60.9 | 54.9 | 131 | 97.3 | 88.3 | 82 | 135.2 | 121.8 | 32 | 172.3 | 155.2 |
| 33 24-5 | 22,1 | 83 | 61.7 | 55.5 | 33 | 98.3 | 89.0 | 83 | 135.9 | 122,4 | 33 | 173.1 | 155.9 |
| 14 25-3 | 22.7 | 84 | 02.4 | 50 2 | 34 | 99.5 | 89.6 | 84 | 136.7 | 123.1 | 34 | 173.8 | 156.5 |
| 35 26.0 | 23.4 | 85 | 63.1 | 56.9 | 35 | 100.3 | 90.3 | 85 | 137.4 | 123.8 | 35 | 374.6 | 157.2 |
| 16 26.7 | 24.1 | 86 | 63.9 | 57.5 | 136 | 101.0 | 910 | 186 | 138.2 | 124.4 | 236 | 175.3 | 157.9 |
| \$7 27.5 | 24.8 | 87 | 64.0 | 58.2 | 37 | 8.101 | 91.7 | 87 | 138.9 | 125.1 | 37 | 176.1 | 158.5 |
| 18 28.2 | 25.4 | 88 | 65.4 | 58.9 | 38 | 102.5 | 92.3 | 88 | 139-7 | 125.8 | 38 | 176.8 | 159.2 |
| 19:9.0 | 26.1 | 89 | 06.1 | 59.5 | 39 | 103.3 | 93.0 | 89 | 140.4 | 120.4 | 39 | 177.5 | 159 9 |
| 19 29.0
40 29.7
41 30.5
42 31.2 | 26.8 | 90 | 66.9 | 60.2 | 40 | 104.0 | 93.7 | 20 | 141.1 | 127.1 | 40 | 178.3 | 160.6 |
| 41 30.5 | 27.4 | 91 | 67.6 | 60.9 | 141 | 104.7 | 94.3 | 191 | 141.9 | 127.8 | 300 | 222.9 | 200.7 |
| 4 31.2 | 28.1 | 92 | 68.3 | | 42 | 105.5 | 95.0 | 92 | 142.6 | 128.4 | 400 | 297 3
371 6 | 267.6 |
| 4 52.7 | 28.8 | | 69.1 | 62.2
52 9 | 43 | 106.2 | 95.7 | 93 | 143.4 | 129.8 | 600 | 445.9 | 334.6 |
| 45 33.4 | 30.1 | 94 | 70.6 | 63.6 | 44 | 107.7 | 97 0 | 95 | 144.9 | 139.5 | 700 | 520 2 | 468.4 |
| 46 14.2 | 30 8 | - | 71.3 | 64.2 | 146 | 108.5 | 97-7 | 196 | | 131.1 | 800 | 594.5 | 535-3 |
| 67 34.0 | 31.4 | 97 | 72.1 | 64.9 | 47 | 109.2 | 98.3 | 97 | 146.3 | 131.8 | 900 | 668.8 | 602.2 |
| 4 35.7 | 32.1 | 98 | 72.8 | 65.6 | 48 | 109.9 | 99.0 | 98 | 147.1 | 132.5 | 1000 | 743.1 | 669.1 |
| \$ 36. | 32.8 | 99 | 73 5 | 00.2 | 49 | 110.7 | 99.7 | 99 | 147.8 | 133.1 | 2000 | 1486.2 | 1338.2 |
| 4 34.2
4 34.9
4 35.7
6 36.4
0 37 1 | 33-5 | 100 | 74.3 | 66 4 | 140 | 111.4 | 100.4 | 200 | - | 133.8 | 3000 | 2/229.3 | 2007.3 |
| nel Deo. | La. | Dift | Dep. | Lat. | 5.A | ep. | Lat. | Dift | Dep. | Lt. | Dift. | Dep. | Lat. |
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| | | | | | | | 43 D | egree | 25. | | | | | 4 |
|------|--------|------|----------|------|------|---------|--------------|-------|----------|-------|-------|-------|--------|-------|
| Dift | Lat. | Dep | Dift | Lat. | Dep. | Dist. | Lat. | Dep. | Dift | Lat. | Dep. | Dift. | Lat. | Dep. |
| . 1 | oc.7 | 00.7 | 51 | 37.3 | 34.8 | 101 | 73-9 | 68.9 | 151 | 110.4 | 103 0 | 201 | 147.0 | 137. |
| 2 | 01.5 | 01.4 | 52 | 38,0 | 35.5 | 02 | 74.6 | 69.5 | 52 | 111.2 | 103.6 | 02 | 147.7 | 137. |
| 3 | 02.2 | 02.0 | 53 | 38.8 | 36.2 | 03 | 75.3 | 70.2 | 53 | 111.9 | 104.3 | 03 | 148.5 | 138. |
| 4 | 02.9 | 02.7 | 54 | 39.5 | 36.8 | 04 | 76.1 | 70.9 | 54 | 112.6 | 105.0 | 04 | 149.2 | 139. |
| 5 | 03.7 | 03.4 | 55 | 40.2 | 37-5 | 05 | 76.8 | 71.6 | 55 | 113.4 | 105.7 | 05 | 149.9 | 139. |
| 6 | 04.4 | 04.1 | 56 | 41.0 | 38 2 | 106 | 77.5 | 72.3 | 156 | 114.1 | 106.4 | 206 | 150.7 | 140. |
| 7 | 05.1 | 04.8 | 57 | 41.7 | 38.9 | 07 | 78.3 | 73.0 | 57 | 114.8 | 107.1 | 07 | 151.4 | 141. |
| 8 | 05.9 | 05.5 | | 42.4 | 39.5 | 08 | 79.0 | 73.6 | 58 | 115.6 | 107.7 | 08 | 152.1 | 141. |
| 9 | 06.6 | 06.2 | 59
60 | 43.1 | 40.2 | 10 | 79.7 | 74.3 | 59
60 | 116.3 | 108.4 | 09 | 152.9 | 142. |
| 10 | _ | _ | - | | | | | _ | - | _ | - | 10 | 153.6 | 143. |
| 11 | 08.0 | 07.5 | 61 | 44.6 | 41.6 | 111 | 81.2 | 75.7 | 161 | 117.7 | 109.8 | 211 | 154.3 | 143. |
| 12 | | c8.2 | 63 | 45.3 | 42.3 | 12 | 82.6 | 76.4 | 62 | - | 110.5 | 12 | 155.0 | 144. |
| 13 | 10.2 | | 64 | 46.8 | 43.6 | 13 | 83.4 | 77-1 | 63 | 119.2 | 111.8 | 13 | 155.8 | 145. |
| 14 | 11.0 | 1 00 | 65 | 47.5 | 44.3 | 14 | 84.1 | 78.4 | 65 | 120.7 | 112.5 | 14 | 156.5 | 145. |
| - | - | _ | 66 | 48.3 | | _ | _ | _ | | - | | 15 | 157.2 | 146. |
| 16 | 11.7 | 10.9 | 67 | 49.0 | 45.0 | 116 | 84.8
85.6 | 79.1 | 166 | 121.4 | 113.2 | 216 | 158.0 | 147. |
| 18 | | | 68 | 49-7 | 46.4 | 17 | 86.3 | 80.5 | 68 | 122.9 | 114.5 | 17 | 158.7 | 148. |
| 19 | 13.9 | | 69 | 50.5 | 47.1 | 19 | 87.0 | 81.2 | 69 | 123.6 | 115.2 | 18 | 159.4 | |
| 20 | 1 4 | | 70 | 51.2 | 47.7 | 20 | 87.8 | 81.8 | 70 | 124.3 | 115.9 | 19 | 160.9 | 149. |
| - | 15.4 | - | 71 | 51.9 | 48.4 | - | 88.5 | 82.5 | _ | 125-1 | 116.6 | | 161.6 | - |
| 21 | 1.2 | 15.0 | 72 | 52.7 | 49.1 | 121 | 89.2 | 83.2 | 171 | 125.8 | 117.3 | 221 | 162.4 | 150. |
| 23 | 1.69 | | 73 | 53.4 | 49.8 | 23 | 90.0 | 83.9 | 72 | 126.5 | 118.0 | 23 | 163.1 | 151. |
| 24 | 6 | | 74 | 54.1 | 50.5 | 24 | 90.7 | 84 5 | 74 | 127.3 | 118.6 | 24 | 163.8 | 152. |
| 25 | 1 -0 - | 17.1 | 75 | 54 9 | 51.2 | 25 | 91.4 | 85.2 | 75 | 128 0 | 119.3 | 25 | 164.6 | 153. |
| 26 | | _ | 76 | 55.6 | 51.8 | 126 | 92.1 | 85.9 | 176 | 128.7 | 120.0 | 226 | 165.3 | 154. |
| 27 | | 1 0 | 77 | 56.3 | 52.5 | 27 | 92.9 | 86.6 | 77 | 129.4 | 120.7 | 27 | 166.0 | 154. |
| 28 | | | 78 | 57.0 | 53.2 | 28 | 93.6 | 87.3 | 78 | 130.2 | 121.4 | 28 | 166.7 | 155. |
| 20 | | | 79 | 57.8 | 53.9 | 29 | 94.3 | 88.0 | 79 | 130.9 | 122.1 | 29 | 167.5 | 156. |
| 30 | | | | 58.5 | 54.5 | 30 | 95.1 | 88.6 | 80 | 131.6 | 122.7 | 30 | 168.2 | 156. |
| 31 | | 21.2 | 81 | 59.2 | 55.2 | 131 | 95.8 | 89.3 | 181 | 132.4 | 123.4 | 231 | 168.9 | 157 |
| 32 | | | 82 | 60.0 | 55.9 | 32 | 96.5 | 90.0 | 82 | 133.1 | 124.1 | 32 | 169.7 | 158. |
| 33 | | | 83 | 60.7 | 56.6 | 33 | 97.3 | 90.7 | 83 | 133.8 | 124.8 | 33 | 170.4 | 158. |
| 34 | | 23.2 | 84 | 61.4 | | 34 | 98.0 | 91.4 | 84 | 134.6 | 125.5 | 34 | 171.1 | 159. |
| 35 | | 23.9 | 85 | 62.2 | - | 35 | 98.7 | 92.1 | 85 | 135.3 | 126.2 | 35 | 171.9 | 160. |
| 36 | | 24.5 | 86 | | 58.6 | 136 | 99.5 | 92.7 | 186 | 136.0 | 126.8 | 236 | 172.6 | -160. |
| 37 | 27.1 | 25.2 | 87 | | 59-3 | 37 | 100.2 | 93.4 | 87 | 136.8 | 127.5 | 37 | 173.3 | 161. |
| 38 | 27.2 | | | | 60.0 | 38 | 100.9 | 94.1 | 88 | 137.5 | 128.2 | 38 | 174.1 | 162. |
| 39 | 28.4 | | 11 | 100 | 60.7 | 39 | 101.7 | 94.8 | 89 | 138.2 | 128.9 | 39 | 174.8 | 163. |
| 40 | | | | _ | 61.4 | 40 | 102.4 | 95.5 | 90 | 139.0 | 129.5 | 40 | 175.5 | 163. |
| 41 | 30.0 | 28.0 | | 66.6 | 62.1 | 141 | 103.1 | 96.2 | 191 | 139.7 | 130.2 | 300 | 219.4 | 204- |
| 42 | 30.7 | 28.6 | | 67.3 | 62.7 | 42 | 103.9 | 96.8 | 92 | 140.4 | 130.9 | 400 | 292.5 | 272- |
| 1 43 | 31.4 | 29.3 | 93 | 08.0 | 63.4 | 43 | 104.6 | 97.5 | 93 | 141.1 | 131.0 | 500 | 365.7 | 341- |
| | | 30.0 | | | 64.1 | | 105.3 | 98.2 | 94 | | 132.3 | | 438.8 | |
| 4 | | 30.7 | - | 69.5 | | 45 | 106.0 | 98.9 | | 142.6 | 133.0 | 700 | 411.9 | 477- |
| 46 | | 31.4 | 96 | 70 2 | 65.5 | | 106.8 | 99.5 | | 143-3 | | 800 | 585.1 | 545 |
| 47 | 34.4 | 32.1 | | 70.9 | 66.2 | | | 100.2 | 97 | 144-1 | 134.3 | 900 | 658.2 | 682. |
| 48 | | 32.7 | | 71,7 | | | | 100.9 | | | 1350 | 1000 | 731.3 | |
| 49 | | 33.4 | 99 | 72.4 | | 49 | | 101.6 | | 145.5 | 135.7 | 2000 | 2103.9 | 2046 |
| 50 | 30.0 | 34-1 | D:0 | 73.1 | | 150 | | 102.3 | | - | 136.4 | | | Lat. |
| Dif | Dep | Lat. | אועון | Dep. | Lat. | II Ditt | Dep. | Lat. | II Dift | Dep. | Lat. | Dift. | Lep. | Dille |

137. 137. 138. 139.

147. 148. 148. 149. 150.

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160. 161. 162. 163. 163. 204. 272. 341. 409. 477. 545. 682. 364. 046

| | | | | | 1 | 44 I |)egre | es. | | | | | | | |
|--|---|----------|------|--------------|------|-------|-------|----------|-------|-------|-------|-----------------|----------------|--|--|
| A Lat. | | Dift | Lat. | Dep. | Dift | Lat. | Dep. | Dia | Lat. | Dep. | Dift. | Lat. | Dep. | | |
| 7 00.7 | 00.7 | 51 | 36.7 | 35.4 | 101 | 72.6 | 70.2 | 151 | 108.6 | 104.9 | 201 | 144.6 | 139.6 | | |
| 2 01-4 | 01.4 | 52 | 37.4 | 36.1 | 02 | 73.4 | 70.8 | 52 | 110.1 | 105.6 | C2 | 145.3 | 140.3 | | |
| 3 02.2 | 02.8 | 53
54 | 38.8 | 37.5 | 04 | 74.1 | 71.5 | 53
54 | 110.8 | 107.0 | 03 | 146.0 | 141.0 | | |
| 4 01.6 | 03.5 | 55 | 39.6 | 38.2 | 05 | 75.5 | 72.9 | 55 | 111.5 | 107.7 | 05 | 147.5 | 142.4 | | |
| 6 04.3 | 04.2 | 56 | 40.3 | 38.9 | 106 | 76.2 | 73.6 | 156 | 112.2 | 108.4 | 206 | 148.2 | _ | | |
| 105.0 | 04.9 | 57 | 41.0 | 39.6 | 07 | 77.0 | 74.3 | 57 | 112.9 | 109.1 | 07 | 143.9 | 143.1 | | |
| 8 05.8 | 05.6 | 58 | 41.7 | 40.3 | 08 | 77.7 | 75.0 | 58 | 113.6 | 109.7 | 08 | 149.6 | 144 5 | | |
| 06.5 | 06.3 | 1 59 | 42.4 | 41.0 | 09 | 78.4 | 75.7 | 59 | 114.4 | 110.4 | 09 | 150.3 | 145.2 | | |
| 10 07.2 | 06.9 | 60 | 43.2 | 41.7 | 10 | 79.1 | 76.4 | 60 | 115.1 | 111.1 | 10 | 151.1 | 145.9 | | |
| 10 07.2 | 07.6 | 61 | 43.9 | 42.4 | 111 | 79.8 | 77-1 | 161 | 115.8 | 111.8 | 211 | 151.8 | 146.6 | | |
| 12 08.6 | 08.3 | 62 | 44.6 | 43.1 | 12 | 80.6 | 77.8 | 62 | 116.5 | 112.5 | 12 | 152.5 | 147.3 | | |
| 13 09-4 | 09.0 | 63 | 45.3 | 43.8 | 13 | 81.3 | 78:5 | 63 | 117.2 | 113.2 | 13 | 153.2 | 147.9 | | |
| 4 10.1 | 10.4 | 64
65 | 46.8 | 44.5 | 14 | 82.0 | 79.2 | 64 | 118.0 | 113.9 | 14 | 153.9 | 148.6 | | |
| 16 11.5 | 10.4 | | | 45.1 | 15 | | 79.9 | - | | 114.6 | 15 | 154.6 | 149.3 | | |
| 16 11.5 | 11.1 | 66 | 47.5 | 45.8 | 116 | 83.4 | 80,6 | 166 | 119.4 | 115.3 | 216 | 155 4 | 150.0 | | |
| 17 12.2 | 12.5 | 68 | 48.9 | 46.5 | 17 | 84.2 | 81.3 | 67
68 | 120.1 | 116.7 | 17 | 156.1 | 150.7 | | |
| 10 13.7 | 13.2 | 69 | 49.6 | 47.9 | 19 | 85.6 | 82.7 | 69 | 121.6 | 117.4 | 19 | 156.8 | 151.4 | | |
| 10 14.4 | | | 50.4 | 48.6 | 20 | 86.3 | 83.4 | | | 118.1 | | | 152.1 | | |
| 11 15.1 14.6 71 51.1 49.3 121 87.0 84.0 171 123.0 118.8 221 159.0 153. | | | | | | | | | | | | | | | |
| 11 15.8 15.3 72 51.8 50.0 22 87.8 84.7 72 123.7 119.5 22 159.7 .154.2 | | | | | | | | | | | | | | | |
| 11 15.8 15.3 72 51.8 50.0 22 87.8 84.7 72 123.7 119.5 22 159.7 .154.2 11 16.5 16.0 73 52.5 50.7 23 88.5 85.4 73 124.4 120.2 23 160.4 154.9 | | | | | | | | | | | | | | | |
| 4 17.3 | 11 15.8 15.3 72 51.8 50.0 22 87.8 84.7 72 123.7 119.5 22 159.7 154.2 15 16.0 73 52.5 50.7 23 88.5 85.4 73 124.4 120.2 23 160.4 154.9 14 17.3 16.7 74 53.2 51.4 24 89.2 86.1 74 125.2 120.9 24 161.1 155.6 | | | | | | | | | | | | | | |
| 15 18.C | 13 16.5 16.0 73 52.5 50.7 23 88.5 85.4 73 124.4 120.2 23 160.4 154.9 17.3 16.7 74 53.2 51.4 24 89.2 86.1 74 125.2 120.9 24 161.1 155.6 15.6 17.4 75 53.9 52.1 25 89.9 86.8 75 125.9 121.6 25 161.8 156.3 | | | | | | | | | | | | | | |
| 26 18-7 | 18.1 | 76 | 54-7 | 52.8 | 126 | 90.6 | 87.5 | 176 | 126.6 | 122.2 | 226 | 162:6 | 157.0 | | |
| 17 19-4 | 18.8 | 77 | 55.4 | 53.5 | 27 | 91.4 | 88.2 | 77 | 127.3 | 122.9 | 27 | 163.3 | 157.7 | | |
| 18 20.1 | 19.4 | 78 | 56.1 | 54.2 | 28 | 92.1 | 88.9 | 78 | 128.0 | 123.6 | 28 | 164.0 | 158.4 | | |
| 19 20.9 | 20.1 | 79
80 | 56.8 | 54.9 | 29 | 92.8 | 89.6 | 79
80 | 128.8 | 124.3 | 29 | 164.7 | 159-1 | | |
| 10 21.6 | - | | 57.5 | 55.6 | 30 | 93.5 | 90.3 | _ | 129.5 | 125.0 | 30 | 165.4 | 159.8 | | |
| 31 22.3 | 21.5 | 81
82 | 58.3 | 56.3 | 131 | 94.2 | 91.0 | 181 | 130.2 | 125-7 | 231 | 166.2 | 160.4 | | |
| 12 23.0
13 23.7 | 22.9 | 83 | 59.0 | 57.0 | 32 | 94-9 | 91.7 | 83 | 130.9 | 126.4 | 32 | 166.9 | 161.1 | | |
| 34 24.5 | 2 | 84 | 60.4 | 58.3 | 34 | 96.4 | 93.1 | 84 | 132.4 | 127.8 | 33 | 168.3 | 161.8 | | |
| 35 25.2 | | 85 | 61.1 | 59.0 | 35 | 97.1 | 93.8 | 85 | 133.1 | 128.5 | 35 | 169 0 | 163.2 | | |
| 16 25.9 | | 86 | 61.9 | 59.7 | 136 | 97.8 | 94.5 | 186 | 133.8 | 129.2 | 236 | 169.8 | 163.9 | | |
| 37 26.6 | 25.7 | 87 | 62.6 | 60.4 | 37 | 98.5 | 95.2 | 87 | 134.5 | 129.9 | 37 | 170.5 | 164.6 | | |
| 38 27.3 | 26.4 | 88 | 63.3 | 61.1 | 38 | 99.3 | 95.9 | 88 | 135.2 | 130.6 | 38 | 171.2 | 165.3 | | |
| 39 28.1 | 27.1 | 89 | 64.0 | 61.8 | 39 | 100.0 | 96.5 | 89 | 135.9 | 131.3 | 39 | 171.9 | 166.0 | | |
| 40 28.8 | 27.8 | 90 | 64.7 | 62.5 | 40 | 100.7 | 97.2 | 90 | 136.7 | 132.0 | 40 | 172.6 | 166.7 | | |
| | 28.5 | 91 | 65.5 | 63.2 | 141 | 101.4 | 97-9 | 191 | 137.4 | 132.7 | 300 | 215.8 | 208.4 | | |
| 42 30.2 | 29.2 | 92 | 66.2 | 63.9 | | 102.1 | 98 6 | 92 | 138.1 | 133.4 | 400 | 287.7 | 277-9 | | |
| 43 30.9 | 29.9 | 93 | 66.9 | 64.6 | | 102.9 | 99.3 | 93 | 138.8 | 134.1 | 500 | 359 7 | 347·3
416.8 | | |
| 45 22.4 | 30.0 | | 67.6 | 65.3 | | 103.6 | | 94 | 139-5 | 134.8 | 600 | 431.6 | 416.8 | | |
| 45 32.4
46 33.1 | 33.6 | 95 | - | | _ | 104.3 | 100.7 | 95 | 140.3 | 135.4 | 700 | 503.5 | 486.3 | | |
| 47 33.8 | 22.6 | 96 | 69.1 | 66.7 | | 105.0 | 101.4 | 196 | | 136.1 | 800 | 575.5 | 553.7 | | |
| 48 34.5 | 33.2 | 97 | 69.8 | 67.4
68.1 | 47 | 105.7 | 102.8 | 97
98 | 141.7 | 137.5 | 1000 | 647.4 | 625.1 | | |
| 49 35.2 | 134.0 | 99 | 71.2 | 68.8 | 49 | 107.2 | 102.5 | 99 | 143.1 | 138.2 | | 719·3
1438·6 | 1389.4 | | |
| 35.c | 134.7 | 100 | 71.9 | 69.5 | 150 | 107.9 | 104.2 | 200 | 143.9 | 138.9 | 3000 | 2157-9 | 2084.1 | | |
| Mil Dep. | Lat. | Dift | Dep. | Lat. | Dia | - | Lat. | | Dep. | Lat. | - | Dep. | Lat. | | |
| 7 | - | 4 | -1. | | | CT | | | 7.4 | 2 4 | | 16.65 | - | | |
| | | | | | | | | | | | | | | | |

 $^{\odot}$

| Difference of Buttude una Beparture. | | | | | | | | | | | | | | |
|--------------------------------------|-------|------|------|------|-------|--------|-------|-------|----------|-------|--------|-------|----------|----------|
| 45 Degrees. | | | | | | | | | | | | | | |
| Dift | Lest. | Dep. | Dift | - | Dep. | n Dift | Lat. | Dep. | [Di | Lat. | Dep. | ID.A | . Lat. | -10 |
| 1 | 00.7 | 90.7 | 5) | 36.1 | 36.1 | 101 | 71.4 | _ | 115 | 1 106 | | - 1 | | |
| 2 | 01.4 | 1 | 52 | | 36.8 | 02 | | 72.1 | 1 5 | | | | | _ 1 - 7- |
| 3 | 02.1 | 02.1 | 53 | 37.5 | 37.5 | 03 | 72.9 | | | 1 0 | 2 108. | 2 0 | | 1 . 1. |
| 4 | 02.8 | 02.8 | 54 | 38 2 | 38.2 | 04 | 73-5 | | | 108. | | 9 0 | | |
| 5 | 03.5 | 03 5 | 55 | 38.9 | 38.0 | 05 | 74.2 | 74.2 | | | 6 109. | | | |
| 6 | 04.2 | 04.2 | 56 | 39 0 | 39.0 | 106 | 74 9 | 74.9 | 156 | 110. | 110. | 3 20 | 6 145. | |
| 7 | 04 9 | 04.9 | 57 | 40.7 | 103 | 07 | 75.7 | 75.7 | 1 57 | | | 0 0 | 7 146. | |
| 8 | 05.7 | 05.7 | 58 | | 1.0 | 80 | 76.4 | | | 111.7 | | | 8 147. | |
| 9 | 00.4 | 06.4 | 59 | | 141.7 | 09 | | | 59 | | 112. | | | 8 147 |
| 10 | 07.1 | 07.1 | 60 | 42.4 | 42.4 | 10 | 77.8 | | | | - | | 148. | 5 143 |
| 11 | 07.8 | 07 8 | 61 | 43.1 | 43.1 | 111 | 78.5 | | | | | 21 | 1 149. | |
| 12 | 08.5 | | 62 | | 43.8 | 12 | | 1 | 62 | | 114. | 12 | | |
| 13 | 09.2 | 09.2 | 63 | | 44.5 | 13 | 0 1 | | | | 115. | | 150. | |
| 14 | 09.9 | 09.9 | 64 | | 45.3 | 14 | | | | 116.0 | | | | |
| 15 | 10 6 | 10.6 | 65 | - | 46.0 | 15 | | | | | 116 7 | 1 | 152.0 | 152 |
| 16 | 113 | 11.3 | 66 | 46.7 | 46.7 | 116 | 82.0 | | 166 | | | 11 | | |
| 17 | 12.0 | 12.0 | 67 | 47.4 | 47.4 | 17 | 82.7 | 82.7 | 62 | 118.1 | | | | 153 |
| 18 | 12.7 | 12.7 | 68 | 48.1 | 48.1 | 18 | 83.4 | 83.4 | 68 | | | 11 | 154.1 | 1 154 |
| 19 | 13-4 | 13.4 | 69 | | 48.8 | 19 | 84.1 | | | | | | | |
| 20 | 14-1 | 14.1 | 70 | 49.5 | 49.5 | 20 | | | 70 | - | - | - | - | |
| 21 | 14.8 | 14.8 | 71 | 50.2 | 50.2 | 121 | 85.6 | 85.6 | 171 | | 1 2 | | 156.3 | 156 |
| 22 | 15.6 | 15.6 | 72 | 50.9 | 50.9 | 22 | 86.3 | 86.3 | 72 | | | 11 | | 157 |
| 23 | 16.3 | 16,3 | 73 | 51.6 | 51.6 | 23 | 87.0 | | 73 | 122.3 | 122.3 | | | 157 |
| 24 | 17.0 | 17.0 | 74 | 52.3 | 52.3 | 24 | 87.7 | 87.7 | | 123.0 | 1 - | | | |
| 25 | 17.7 | 17.7 | 75 | 53.0 | 53.0 | 25 | 88.4 | | 75 | 123.7 | 123.7 | - | - | - |
| 26 | 18.4 | 18.4 | 76 | 53.7 | 53.7 | 126 | 89.1 | 89.1 | 176 | 124.4 | 124.4 | 226 | | |
| 27 | 19.1 | 19.1 | 77 | 54.4 | 54.4 | 27 | 89.8 | 89.8 | 77 | 125.2 | 125.2 | | 150.5 | |
| 28 | 19.8 | 19.8 | 78 | 55.2 | 55.3 | 28 | 90,5 | 1 | 78 | 125.9 | 125.9 | 11 | 161.2 | |
| 29 | 21.2 | 20.5 | 80 | 55.9 | 55.9 | 29 | 91.2 | 1 - | 79
80 | 126.6 | 126.6 | | 161.9 | |
| 30 | 27170 | - | - | - | - | 30 | 91.9 | | - | 127.3 | 127.3 | - | | |
| 31 | 21.9 | 21.9 | 81 | 57.3 | 57.3 | 131 | 92.6 | 92.6 | 181 | 128.0 | 128.0 | 11 | 163.3 | 163. |
| 32 | 22.6 | 22.6 | 82 | 58.0 | 58.7 | 32 | 93.3 | 1 | 82 | 128.7 | 128.7 | | 164.0 | |
| 33 | 23 3 | 23.3 | 84 | 59.4 | | 33 | 94.0 | | 83 | 129-4 | 129.4 | 33 | 164.7 | 164 |
| 34 | 24.7 | 24.7 | 85 | 60.1 | 59.4 | 34 | 94:7 | 94.7 | 85 | 130.1 | 130.1 | 34 | 166.2 | |
| | _ | - | 86 | 60.8 | - | 35 | 95.5 | 95.5 | - | - | _ | 35 | | |
| 30 | 25.5 | 25.5 | 87 | 61.5 | 61.5 | 136 | 96.2 | 96.2 | 186 | 131.5 | 131.5 | 236 | 166.9 | 166. |
| 38 | 26.9 | 26.9 | 88 | 62.2 | 62.2 | 37 | 96 9 | 96.9 | 87 | 132.2 | 132.2 | | 168.3 | 168. |
| | 27.6 | 27.6 | 89 | 62.9 | 62.9 | 38 | 97.6 | 97.6 | 89 | 132.9 | 132.9 | 38 | 169.0 | 169. |
| 39 | 28.3 | 28.3 | 90 | 63.6 | 63.6 | 39 | 99.0 | 99.0 | 90 | 133.0 | 133.6 | 39 | 169.7 | 169. |
| | 29.0 | _ | - | 64.3 | _ | _ | - | - | - | - | | - | 212.1 | 212 |
| | | | | | 64.3 | 141 | 99.7 | | | 135.1 | 135.1 | 300 | 282.8 | |
| 43 | | 30.4 | 1 02 | 65.8 | 65.8 | | 100.4 | 1 | | 135.8 | 136.5 | 500 | 353.6 | 353 |
| | 31.1 | 31.1 | 94 | 66.5 | 66.5 | | 101.8 | | 93 | 137.2 | | 600 | | |
| 45 | 31.8 | 31.8 | 95 | 67.2 | 67.2 | 45 | | 102.5 | 95 | 137.9 | | 700 | 495.0 | .495. |
| 46 | T | 32-5 | 96 | 67.9 | 67.9 | | 103.2 | | | 138.6 | | 800 | 595.7 | 505. |
| | 33.2 | 33.2 | 97 | 68.6 | 68.6 | 146 | 103.2 | | 196 | | | 900 | 636.4 | 636. |
| | | 33.9 | | 69.3 | | | 104.6 | | 97
98 | 139.3 | 140,0 | | 707.1 | 707. |
| 49 | 34.6 | 34 6 | | | 70.0 | | 105.4 | | | 140.7 | | | | |
| 50 | 35.4 | 35.4 | 100 | 70.7 | 70.7 | 150 | 106.1 | 106.1 | 200 | | 141.4 | 3000 | 2121.3 | 2121. |
| _ | Dep. | - | Dift | Dep. | Lat | Dif | Den. | Lat. | | Dep. | | Diff. | Dep. | Lat. |
| | | | | | | | | | | | | | | |
| 45 Degrees. | | | | | | | | | | | | | | |

TABLE IX.

Shewing how many Miles answer to a Degree of Longitude, at every Degree of Latitude.

| Lat. | Miles | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 59.99 | | | | | | | | 29.09 | | |
| 3 | 59.92 | 18 | 57.06 | 33 | 50.32 | 48 | 40.15 | 63 | 28.17 | 78 | 12.48 |
| 4 | 59.85 | 19 | 56.73 | 34 | 49.74 | 49 | 39.36 | 64 | 26.30 | 79 | 11.45 |
| 6 | 59.67 | 21 | 56.01 | 36 | 48.54 | 51 | 37.76 | 66 | 24.41 | 81 | 9.38 |
| 8 | 59.42 | 23 | 55.23 | 38 | 47.28 | 53 | 36.11 | 68 | 23.44 | 83 | 7.32 |
| | | | | | | | | | 21.50 | | |
| 11 | 58.89 | 26 | 53.93 | 41 | 45.28 | 56 | 33.55 | 71 | 19.53 | 86 | 4.18 |
| 13 | 58.46 | 28 | 52.97 | 43 | 43.88 | 58 | 31.79 | 73 | 18.54 | 88 | 2.09 |
| | | | 52.47 | | | | | | 16.54 | 90 | 0.00 |

| TABLE X. Of Meridional Miles. | | | | | | | | | | |
|-------------------------------|------------------------------|--------------------------------------|---|---|---|---|---|---|---|--|
| D. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| М | Mi. | Mi. | Miles | |
| 0 1 2 3 | .0
1.0
2.0
3.0 | 60.0
61.0
62.0
63.0
64.0 | 120.0
121.0
122.0
123.0
124.0 | 180.1
181.1
182.1
183.1 | 240.2
241.2
242.2
243.2 | 300.4
301.4
302.4
303.4 | 362.7
363.7 | 421.1
422.1
423.1
424.1 | 481.6
482.6
483.6
484.6 | |
| 4
56
78 | 5.0
6.0
7.0
8.0 | 65.0
66.0
67.0
68.0 | 125.0
126.0
127.0
128.0 | 184.1
185.1
186.1
187.1
188.1 | 244.2
245.2
246.2
247.2
248.2 | 304.4
305.4
306.4
307.4
308.4 | 364.7
365.7
366.7
367.7
368.7 | 425.1
426.1
427.1
428.1
429.1 | 485.6
486.6
487.6
488.6
489.6 | |
| 9 10 11 12 | 9.0
10.0
11.0
12.0 | 69.0
70.0
71.0
72.0 | 130 0
131.0
132.0 | 189.1
190.1
191.1
192.1 | 249.2
250.2
251.2
252.2 | 309.4
310.4
311.4
312.4 | 369.7
370.7
371.7
372.7 | 430.1
431.1
432.1
433.1 | 490.7
491.7
492.7
493.7 | |
| 13
14
15
16
17 | 13.0
14.0
15.0
16.0 | 73.0
74.0
75.0
76.0
77.0 | 133.0
134.0
135.0
136.0
137.0 | 193.1
194.1
195.1
196.1
197.1 | 253.2
254.2
255.2
256.2
257.2 | 316.5 | 373.7
374.7
375.8
376.8
377.8 | 434.2
435.2
436.2
437.2
438.2 | 494.7
495.7
496.7
497.7
498.7 | |
| 18
19
20
21 | 18.0
19.0
20.0
21.0 | 78.0
79.0
80.0
81.0 | 138.0
139.0
140.0
141.0 | 198.1
199.1
200.1
201.1 | 258.2
259.3
260.3
261.3 | 318.5
319.5
320.5
321.5 | 378.8
379.8
380.8
381.8 | 439.2
440.2
441.2
442.2 | 499.8
500.8
501.8
502.8 | |
| 22
23
24
25 | 22.0
23.0
24.0
25.0 | 83.0
84.0
85.0 | 145.0 | 202.1
203.1
204.1
205.1 | 262.3
263.3
264.3
265.3 | 322.5
323.5
324.5
325.5 | 382.8
383.8
384.8
385.8 | 443.2
444.2
445.2
446.3 | 503.8
504.8
505.8
506.8 | |
| 26
27
28
29 | 26.0
27.0
28.0
29.0 | 87.0
88.0 | 146.0
147.0
148.1
149.1 | 206.1
207.1
208.1
209.1 | 266.3
267.3
268.3 | 326.5 | 386.8
387.8
388.8 | 447·3
448·3
449·3
450·3 | 507.8
508.9
509.9
510.9 | |
| _ | Equation fubtractive. | | | | | | | | | |

| - | | 1 | | | 1 | | | | - |
|----|------|-------|-------|----------|----------|--------|-------|--------|-------|
| D. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| M | Mi. | Miles | Miles | Miles | Miles | Miles | Miles | Miles | Miles |
| | 30.0 | 90.0 | 150.1 | 210.1 | 270.3 | 330.5 | 390.8 | 451.3 | 511.9 |
| | 31.0 | 91.0 | 151.1 | 211.1 | 271.3 | 331.5 | 391.9 | 452.3 | 512.9 |
| | 32.0 | 92.0 | 152.1 | 212.1 | 272.3 | 332.5 | 392.9 | 453.3 | 513.9 |
| 33 | 33.0 | 93.0 | 153.1 | 213.1 | 273.3 | 333.5 | 393.9 | 454-3 | 514.9 |
| 34 | 34.0 | 94.0 | 154.1 | 214.1 | 274.3 | 334.5 | 394.9 | 455.3 | 515.9 |
| 35 | 35.0 | 95.0 | 155.1 | 215.1 | 275.3 | 335.5 | 395.9 | 456.3 | 516.9 |
| 36 | 36.0 | 96.0 | 156.1 | 216.1 | 276.3 | 336.5 | 396.9 | 457-3 | 518.0 |
| 37 | 37.0 | 97.c | 157.1 | 217.1 | 277.3 | 337.5 | 397.9 | 458.4 | 519.0 |
| 38 | 38.0 | 98.0 | 158.1 | 218.2 | 278.3 | 338.6 | 398.9 | 459.4 | 520.0 |
| 39 | 39.0 | 99.0 | 159.1 | 219.2 | 279.3 | 339 6 | 399.9 | 460.4 | 521.0 |
| 40 | 40.0 | 100.0 | 160.1 | 220 2 | 280.3 | 340.6 | 400.9 | 461.4 | 522.0 |
| 41 | 41.0 | 101.0 | 161.1 | 221.2 | 281.3 | 341.6 | 401.9 | 462.4 | 523.0 |
| 42 | 42.0 | 102.0 | 162.1 | 222.2 | 282.3 | 342.6 | 402.9 | 463.4 | 524.0 |
| 43 | 43.0 | 103.0 | 163.1 | 223.2 | 283.3 | 343.6 | 403.9 | 464.4 | 525.0 |
| 44 | 44.0 | 104.0 | 164.1 | 224.2 | 284.3 | 344.6 | 404.9 | 465.4 | 526.0 |
| 45 | 45.0 | 105.0 | 165.1 | 225.2 | 285.3 | 345.6 | 405.9 | 466.4 | 527.1 |
| 46 | 46.0 | 106.0 | 166.1 | 226.2 | 286.3 | 346.6 | 407.0 | 4.67.4 | 528.1 |
| 47 | 47.0 | 107.0 | 167.1 | 227.2 | 287.3 | 347.6 | 408.0 | 468.4 | 529.1 |
| 48 | 48.0 | 108.0 | 168.1 | 228.2 | 288.3 | 348.6 | 409.0 | 469.5 | 530.1 |
| 49 | 49.0 | 109.0 | 169.1 | 229.2 | 289.3 | 349.6 | 410.0 | 470.5 | 531:1 |
| 50 | 50.0 | 110.0 | 170.1 | 230.2 | 290.3 | 350.6 | 411.0 | 471.5 | 532.1 |
| 51 | 51.0 | 111.0 | 171.1 | 231.2 | 291.4 | 351.6 | 412.0 | 472.5 | 533.1 |
| 52 | 52.0 | 112.0 | 172.1 | 232.2 | 292.4 | 352.6 | 413.0 | 473.5 | 534.1 |
| 53 | 53.0 | 113.0 | 173.1 | 233.2 | 293.4 | 353.6 | 414.0 | 474.5 | 535.1 |
| 54 | 54.0 | 114.0 | 174-1 | 234.2 | 294.4 | 354.6 | 415.0 | 475:5 | 536.2 |
| 55 | 55:0 | 115.0 | 175.1 | 235.2 | 295.4 | 355.6 | 416.0 | 476.5 | 537.2 |
| 56 | 56.0 | 116.0 | 176.1 | 236.2 | 296.4 | 356.6 | 417.0 | 477-5 | 538.2 |
| 57 | 57.0 | 117.0 | 177.1 | 237.2 | 297.4 | 357.6 | 418.0 | 478.5 | 539.2 |
| 18 | 58.0 | 118.0 | 178.1 | 238.2 | 298.4 | 358.7 | 4190 | 479.6 | 540.2 |
| 59 | 59.0 | 119.0 | 179.1 | 239.2 | 299.4 | 359.7 | 420.0 | 480.6 | 541.2 |
| - | | | | Equation | n Subtra | alive. | | | |
| 1 | 0.3 | 0.8 | 1.3 | 1.7 | 2.1 | 2.6 | 3.0 | 3.5 | 3.9 |

| | | | 1 | | | | | |
|-----|--------|-------|-------|-----------|-----------|-------|-------|--------|
| D. | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| - | - | M | Mile | Miles | Miles | Miles | Mil | Mil |
| M | Miles | Miles | Miles | Ivilles | Miles | Miles | Miles | Miles. |
| 0 | 542.2 | 603.1 | 664.1 | 725.3 | 786.6 | 848.5 | 910.5 | 972.8 |
| 1 | 543.3 | 604.1 | 665.1 | 726.4 | 787.9 | 849.5 | 911.5 | 973.8 |
| 2 | 544.3 | 605.1 | 666.1 | 727.4 | 788.9 | 850.6 | 912.6 | 974.8 |
| 3 | 545.3 | 606.1 | 667.1 | 728.4 | 789.9 | 851.6 | 913.6 | |
| 4 | 546.3 | 607.1 | 668.1 | 729.4 | 790.9 | 852.6 | 914.6 | 976.9 |
| | 547.3 | 608.2 | 669.2 | 730.5 | 792.0 | 853.7 | 915.7 | 978.0 |
| 5 | 548.3 | 609.2 | 670.2 | 731.5 | 793.0 | 854.7 | 916.7 | 979.0 |
| | 549.3 | 610,2 | 671.2 | 732.5 | 794.0 | 855.7 | 917.7 | 980.0 |
| 7 8 | 550.3 | 611.2 | 672.2 | 733.5 | 795.0 | 856.8 | 918.8 | 981.1 |
| 9 | 551.4 | 612.2 | 673.2 | 734.6 | 796.1 | 857.8 | 919.8 | 982.1 |
| 10 | 552.4 | 613.2 | 674-3 | 735.6 | 797.1 | 858.9 | 920.8 | 983.2 |
| 11 | 553.4 | 614.2 | 675.3 | 736.6 | 798.1 | 859.9 | 921.9 | 984.2 |
| 12 | 554.4 | 615.3 | 676.3 | 737.6 | 799.1 | 861.0 | 922.9 | 985.2 |
| 13 | 555.4 | 616.3 | 677.3 | 738.7 | 800.2 | 862.0 | 923.9 | 986.3 |
| 14 | 556.4 | 617.3 | 678.3 | 739.7 | 801.2 | 863.0 | 925.0 | 987.3 |
| 15 | 557.4 | 618.3 | 679.4 | 740.7 | 802.2 | 864.1 | 926.0 | 988.4 |
| 16 | 558.4 | 619.3 | 680.4 | 741.7 | 803.2 | 865.1 | 927.0 | 989.4 |
| 17 | 559.4 | 620.3 | 681.4 | 742.8 | 804.3 | 866.1 | 928.1 | 990.4 |
| 18 | 560.5 | 621.3 | 682.4 | 743.8 | 805.3 | 867.2 | 929.1 | 991.5 |
| 19 | 561.5 | 622.4 | 683.4 | 744.8 | 806.3 | 868.2 | 930.1 | 992.5 |
| 20 | 562.5 | 623.4 | 684.5 | 745.8 | 807.3 | 869-2 | 931.2 | 993.6 |
| 21 | 563.5 | 624.4 | 685.5 | 746.9 | 808.4 | 870.3 | 932.2 | 994.6 |
| 22 | 564.5 | 625.4 | 686.5 | 747.9 | 809.4 | 871-3 | 933.2 | 995.6 |
| 23. | 565.5 | 626.4 | 687.5 | 748.9 | 810.4 | 872.3 | 934-3 | 995.7 |
| 24 | 566.6 | 627.4 | 688.5 | 749.9 | 811.4 | 873.4 | 935.3 | 997.7 |
| 25 | 567.6 | 628.5 | 689.6 | 751.0 | 812.5 | 874-4 | 936.3 | 998.8 |
| 26 | \$68.6 | 629.5 | 690.6 | 752.0 | 813.5 | 875.4 | | 999.8 |
| 27 | 569.6 | 630.5 | 691.6 | 753.0 | 814.5 | 876.5 | 938.4 | 1000.8 |
| 28 | 570.6 | 631.5 | 692.6 | 754.0 | 815.5 | 877.5 | 939.4 | 1001.9 |
| 29 | 571.6 | 632.5 | 693.6 | 755.1 | 816.6 | 878.5 | 940.5 | 1002.9 |
| , | ,, | , , | ,,, | .,, | 1 1 | 1 | 1 | 1 |
| | | , | Equ | ation ful | btractive | | | |
| | 4.1 | 4.61 | 5.1 | 5.5 | 5.9 | 6.5 | 1 6.8 | 1 7. |

| _ | 1 | 1 | | 1 | , | | | |
|----|-------|-------|-------|----------|-----------|-------|-------|--------|
| D. | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| - | - | - | - | - | - | - | - | - |
| M | Miles | Miles | Miles | Miles | Miles | Miles | Miles | Miles. |
| 30 | 572.6 | 633.5 | 694.7 | 756.1 | 817.6 | 879 6 | 941.5 | 1004.0 |
| 31 | 573.7 | 634.6 | 695.7 | 757-1 | 818.6 | 880.6 | 942.5 | 1005.0 |
| 32 | 574.7 | 635.6 | 696.7 | 758.1 | 819.6 | 881.6 | 943.6 | 1006. |
| 33 | 575.7 | 636.6 | 697.7 | 759.2 | 820.7 | 882.7 | 944 6 | 1007. |
| 34 | 576.7 | 637.6 | 698.7 | 760.2 | 821.7 | 883.7 | 945.6 | 1008. |
| 35 | 577.7 | 638.6 | 699.8 | 761.2 | 822.7 | 884.7 | 946.7 | 1009. |
| 36 | 578.7 | 639.6 | 700.8 | 762.2 | 823.7 | 885.8 | 947.7 | 1010. |
| 37 | 579-7 | 640.6 | 701.8 | 763.3 | 824.8 | 886.8 | 948.7 | 1011. |
| 38 | 580.8 | 641.7 | 702.8 | 764.3 | 825.8 | 887.8 | 949.8 | 1012. |
| 39 | 581.8 | 642.7 | 703.8 | 765.3 | 826.8 | 888.9 | 950.8 | 1013. |
| 40 | 582.8 | 643.7 | 704.9 | 766.3 | 827.9 | 889.9 | 951.9 | 1014. |
| 11 | 583.8 | 644.7 | 705.9 | 767.4 | 828.9 | 890.9 | 952,9 | 1015. |
| 12 | 584.8 | 645.7 | 706.9 | 768.4 | 829.9 | 8920 | 953.9 | 1016. |
| 13 | 585.8 | 646.7 | 707.9 | 769.4 | 831.0 | 893.0 | 955.0 | 1017. |
| 44 | 586.8 | 647.7 | 708.9 | 770.4 | 832.0 | 894.0 | 956.0 | 1018. |
| 15 | 587.9 | 648.8 | 710.0 | 771.5 | 833.0 | 895.1 | 957-1 | 1019.0 |
| 16 | 588.9 | 649.8 | 711.0 | 772.5 | 834.1 | 896.1 | 958.1 | 1020.0 |
| 17 | 589.9 | 650.8 | 712.0 | 773.5 | 835.1 | 897.1 | 959.2 | 1021. |
| 8 | 590.9 | 651.8 | 713.0 | 774.5 | 836.1 | 898.2 | 960.2 | 1022. |
| 9 | 591.9 | 652.8 | 714.1 | 775.6 | 837.2 | 899 2 | 961.3 | 1023. |
| 0 | 592.9 | 653.9 | 715.1 | 776.6 | 838.2 | 900.2 | 962.3 | 1024. |
| 1 | 593.9 | 654.9 | 716.1 | 777.6 | 839.2 | 901.2 | 963.4 | 1025.0 |
| 2 | 595.0 | 655.9 | 717.1 | 778.6 | 840.3 | 902.3 | 964.4 | 1026. |
| 3 | 596.0 | 656.9 | 718.2 | 779.7 | 841.3 | 903.3 | 965.5 | 1028. |
| 4 | 597.0 | 657.9 | 7192 | 780.7 | 842.3 | 924.3 | 966.5 | 1029.0 |
| 5 | 598.0 | 659.0 | 720.2 | 781.7 | 843.4 | 905.4 | 967.6 | 1030. |
| 6 | 599.0 | 660.0 | 721.2 | 782.7 | 844.4 | 906.4 | 968.6 | 1031. |
| 7 | 600.0 | 661.0 | 722.3 | 783.8 | 845.4 | 907.4 | 969.6 | 1032. |
| | 601.0 | 662.0 | 723.3 | 784.8 | 845.5 | 908.4 | 970.7 | 1033. |
| 9 | 602.1 | 663 0 | 724.3 | 785.8 | 847.5 | 909.5 | 971.7 | 1034. |
| | | | Equi | ation su | btractive | | | |
| | 4.3 | 4:7] | 5,2 | 5:7 | 6.1 | 6.7 | 1 6.9 | 1 71 |

Ff2

| D. | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|-------|--------|--------|----------|-----------|--------|--------|--------|
| - | - | - | - | | | - | - |
| M | Miles. | Miles. | Miles. | Miles | Miles. | Miles. | Miles. |
| -0 | 1035.3 | 1098.2 | 1161.5 | 1225.1 | 1289.2 | 1353.7 | 1418. |
| 1 | 1036.3 | 1099.3 | 1162.5 | 1226.2 | 1290.2 | 1354.0 | 1419. |
| 2 | 1037.4 | 1100.3 | 1163.6 | 1227.3 | 1291.3 | 1355.8 | 1420. |
| 3 | 1038.4 | 1101.4 | 1164.7 | 1228.3 | 1292.4 | 1356.9 | 1421 |
| | 1039 5 | 1102.4 | 1165.7 | 1229.4 | 1293.5 | 1358.0 | 1423 |
| 56 | 1040.5 | 1103.5 | 1166.8 | 1230.4 | 1294-5 | 1359.0 | 14:4. |
| 6 | 1041.6 | 1104.5 | 1167.8 | 1231.5 | 1295.6 | 1360.1 | 1425.1 |
| | 1042.6 | 1105.6 | 1168.9 | 1232.6 | 1296.7 | 1361.2 | 1426. |
| 7 | 1043.7 | 1106.6 | 1170.0 | 1233.6 | 1297.8 | 1362.3 | 1427. |
| 9 | 1044.7 | 1107.7 | 1171.0 | 1234.7 | 1298 8 | 1363.3 | 1428. |
| 10 | 1045.8 | 1108.7 | 1172.1 | 1235.8 | 1299.9 | 1364.4 | 1429. |
| 11 | 1046.8 | 1109.8 | 1173.1 | 1236.8 | 1301.0 | 1365.5 | 1430. |
| 2 | 1047.9 | 1110.8 | | 1237.9 | 1302.0 | 1356.6 | 1431. |
| 3 | 1048.9 | 1111.9 | 1175.2 | 1239.0 | 1303.1 | 1367.6 | 1432. |
| 14 | 1049.9 | 1112.9 | 1176.3 | 1240.0 | 1304.2 | 1368.7 | 1433. |
| 15 | 1051.0 | 1114.0 | 1177.4 | 1241.1 | 1305.3 | 1369.8 | 1434 |
| 16 | 1052,0 | 1115.0 | 1178.4 | 1242.2 | 1306.3 | 1370.9 | 1436. |
| 7 | 1053.1 | 1116.1 | 1179.5 | 1243.2 | 1307.4 | 1372.0 | 1437. |
| 8 | 1054.1 | 1117.1 | 1180.5 | 1244.3 | 1308.5 | 1373.1 | 1438. |
| 9 | 1055.2 | 1118.2 | 1181.6 | 1245.4 | 1309.6 | 1374.2 | 1439- |
| 0 | 1056.2 | 1119.2 | 1182.7 | 1246.4 | 1310.6 | 1375.3 | 1440. |
| 1 | 1057.3 | 1120.3 | 1183.7 | 1247.5 | 1311.7 | 1376.4 | 1441. |
| 2 | 1058.3 | 1121.3 | 1184.8 | 1248.6 | 1312.8 | 1377-4 | 1442.0 |
| 3. | 1059.3 | 1122.4 | 1185.8 | 1249.6 | 13138 | 1378.5 | 1443-7 |
| 4 | 1060.4 | 1123.4 | 1186.9 | 1250.7 | 1314.9 | 1379.6 | 1444. |
| 5 | 1061.4 | 1124.5 | 1188.0 | 1251.8 | 1316.0 | 1380.7 | 1445.8 |
| 6 | 1062.5 | 1125.5 | 1189.0 | 1252.8 | 1317.1 | 1381.8 | 1446.9 |
| 7 | 1063.5 | 1126.6 | 1190.1 | 1253.9 | 1318.1 | 1382.8 | 1448.0 |
| 8 | 1064.6 | 1127.6 | 1191.1 | 1255.0 | 1319.2 | 1383.9 | 1449. |
| 9 | 1065.6 | 1128.7 | 1192.2 | 1256.0 | 1320.3 | 1385.0 | 1450. |
| 100.5 | | | Equation | Subtracti | ve. | | |
| _ | 7.71 | 8.3 | 100 | | * | 9.7 | 10. |

|). | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|----|--------|--------|----------|-----------|--------|--------|--------|
| N | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0 | 1006.7 | 1129.7 | 1193.2 | 1257.1 | 1321.4 | 1386.1 | 1451.2 |
| 1 | 1067.7 | 1130.8 | 1194.3 | 1258.2 | 1322.4 | 1387.2 | 1452. |
| 2 | 1068.8 | 1131.8 | 1195.4 | 1259.2 | 1323.5 | 1388.3 | 1453. |
| 33 | 1069.8 | 1132.9 | 1196.4 | 1260.3 | 1324.6 | 1389.4 | 1454. |
| 34 | 1070.9 | 1134.0 | 1197.5 | 1261.4 | 1325.7 | 1390.4 | 1455- |
| 35 | 1072.0 | 1135.1 | 1198.5 | 1262.4 | 1326.7 | 1391.5 | 1456. |
| 36 | 1073.0 | 1136.1 | 1199.6 | 1263.5 | 1327.8 | 1392.6 | 1457. |
| 37 | 1074.1 | 1137.2 | 1200.7 | 1264.6 | 1328.9 | 1393.7 | 1458. |
| 38 | 1075.1 | 1138.2 | 1201.7 | 1265.6 | 1330.0 | 1394.8 | 1460. |
| 39 | 1076.2 | 1139.3 | 1202.8 | 1266.7 | 1331.0 | 1395.8 | 1461. |
| 40 | 1077.2 | 1140.3 | 1203.9 | 1267.8 | 1332.1 | 1396.9 | 1462. |
| 41 | 1078.3 | 1141.4 | 1204.9 | 1268.8 | 1333.2 | 1398.0 | 1463. |
| 42 | 1079 3 | 1142.4 | 1206.0 | 1269.9 | 1334.2 | 1399.1 | 1464. |
| 43 | 1080.4 | 1143.5 | 1207.1 | 1271.0 | 1335.2 | 1400.2 | 1465. |
| 44 | 1081.4 | 1144.6 | 1208.1 | 1272.1 | 1336.4 | 1401.3 | 1466. |
| 45 | 1082.5 | 1145.6 | 1209.2 | 1273.1 | 1337-5 | 1402.4 | 1467. |
| 46 | 1083.5 | 1146.7 | 1210.2 | 1274.2 | 1338.6 | 1403.4 | 1468. |
| 47 | 1084.6 | 1147.7 | 1211.3 | 1275.3 | 1339.7 | 1494-5 | 1469. |
| 48 | 1085.6 | 1148.8 | 1212.4 | 1276.3 | 1340.7 | 1405.6 | 1470. |
| 49 | 1086.7 | 1149.8 | 1213.4 | 1277.4 | 1341.8 | 1406.7 | 1472. |
| 50 | 1087.7 | 1150.9 | 1214.5 | 1278.5 | 1342.9 | 1407.8 | 1473. |
| 51 | 1088.8 | 1152.0 | 1215.5 | 1279.5 | 1344.0 | 1408.8 | 1474. |
| 52 | 1089.8 | 1153.0 | 1216.6 | 1280.6 | 1345.0 | | 1475. |
| 53 | 1090.9 | 1154.1 | 1217.7 | 1281.7 | 1346.1 | 1411.0 | 1476. |
| 54 | 1091.9 | 1155.1 | 1218.7 | 1282.7 | 1347.2 | 1412.1 | 1477 |
| 55 | 1093.0 | 1156.2 | 1219.8 | | 1348.3 | 1413.2 | 1478. |
| 56 | 1094.0 | | 1220.9 | | 1349.4 | 1414.3 | 1479. |
| 57 | 1095.1 | 1158.3 | 1221.9 | | 1350.4 | | |
| 58 | 1096.1 | 1159.4 | 1223.0 | | 1351.5 | 1416.5 | 1481. |
| 59 | 1097.2 | 1160.4 | 1224.1 | 1288.1 | 1352.6 | 1417.6 | 1483. |
| - | | | Equation | n fubtra& | live. | | |

 $^{\circ}$

| D. | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---------|--------|--------|---------|------------|--------|------------------|--------|
| - | | - | - | | | - | |
| M. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0 | 1484.1 | 1550.0 | 1616.5 | 1683.6 | 1751.2 | 1819.5 | 1888.4 |
| 1 | 1485.2 | 1551.1 | 1617.6 | 1684.7 | 1752.3 | 1820.6 | 1889.5 |
| 2 | 1486.3 | 1552.2 | 1618.7 | 1685.8 | 1753.4 | 1821.7 | 1890.7 |
| 3 | 1487.3 | 1553.3 | 1619.8 | 1686.9 | 1754.6 | 1822.9 | 1891.9 |
| 4 | 1488.4 | 1554.4 | | | 1755.7 | _ | 1893.0 |
| 3 4 5 6 | 1489.5 | 1555.5 | 1622.0 | 1689.1 | 1756.8 | 1825.2
1826.3 | 1894.2 |
| | 1490.6 | 1556.6 | 1623.2 | 1691.4 | 1758.0 | 1827.5 | 1895.3 |
| 7 8 | 1491.7 | 1557.7 | 1625.4 | 1692.5 | 1700.2 | 1828.6 | 1897.6 |
| 9 | 1493.9 | 1559.9 | 1626.5 | 1693.6 | 1761.4 | 1829.7 | 1898.8 |
| 10 | 1495.0 | 1561.0 | 1627.6 | 1694.8 | 1702.5 | 1830.9 | 1899.9 |
| 11 | 1496.1 | 1562.1 | 1628.7 | 1695.9 | 1763.6 | 1832.0 | 1901.1 |
| 12 | 1497.2 | 1563.2 | 1629.8 | 1697.0 | 1764.8 | 1833.2 | 1902.3 |
| 13 | 1498.3 | 1564.3 | 1631.0 | 1698.1 | 1765.9 | 1834.3 | 1903.4 |
| 14 | 1499-4 | 1565.4 | 1632.0 | 1699.3 | 1767.0 | 1835.5 | 1904.6 |
| 15 | 1500.5 | 1566.5 | 1633.2 | 1700.4 | 1768.2 | 1836.6 | 1905.7 |
| 16 | 1501.6 | 1567.6 | 1634.3 | 1701.5 | 1769.3 | 1837.8 | |
| 17 | 1502.7 | 1568.6 | 1635.4 | 1702.6 | 1770.5 | 1838.9 | 1908.1 |
| 18 | 1503.8 | 1569.8 | 1636.5 | 1703.8 | 1771.6 | 1840.1 | 1909.2 |
| 19 | 1504.9 | 1571.0 | 1637.7 | 1704.9 | 1772.7 | | - |
| 20 | 1506.0 | 1572.1 | 1638.8 | 1706.0 | 1773.9 | 1842.4 | 1911.5 |
| 21 | 1507.1 | 1573.2 | 1639.9 | 1707.1 | 1775.0 | 1844.6 | 1913.8 |
| 23 | 1509.3 | 1574-3 | 1642.1 | 1709.4 | 1777.2 | 1845.8 | 1915.0 |
| 24 | 1510.4 | 1576.5 | 1643.2 | 1710.5 | 1778.4 | 1846.9 | 1916.2 |
| 25 | 1511.5 | 1577.6 | 1644.3 | 1711.6 | 1779.5 | 1848.1 | |
| 26 | 1512.6 | 1578.7 | 1645.5 | 1712.8 | 1780.6 | 1849.2 | |
| 27 | 1513.7 | 1579.8 | 1646.6 | 1713.9 | 1781.8 | 1850.4 | |
| 28 | 1514.8 | 1580.9 | 1647.7 | 1715.0 | 1783.0 | 1851.5 | 1920.8 |
| 29 | 1515.9 | 1582.0 | 1648.8 | 1716.1 | 1784.1 | 1852.7 | 1921.9 |
| - | | | Equatio | n subtract | live. | | |
| | 10.6 | 10.9 | 11:4 | 11.9 | 12.2 | 12.6 | 1 13.9 |

| _ | | | | | | | |
|----------|--------|--------|----------|------------|--------|--------|--------|
| D. | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| - | | - | | | | - | |
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 30 | 1517.0 | 1583.2 | 1649.9 | 1717.3 | 1785.2 | 1853.8 | 1923.1 |
| 31 | 1518.1 | 1584.3 | 1651.0 | 1718.4 | 1785.4 | 1855.0 | 1924.3 |
| 32 | 1519.2 | 1585.4 | 1652.2 | 1719.5 | 1787.5 | 1856.1 | 1925.4 |
| 33 | 1520.3 | 1586.5 | 1653.3 | 1720.7 | 1788.6 | 1857.2 | 1926.6 |
| 34 | 1521.4 | 1587.6 | 1654.4 | 1721.8 | 1789.8 | 1858.4 | 1927.8 |
| 35 | 1522.5 | 1588.7 | 1655.5 | 1722.9 | 1790.9 | 1859.6 | 1928.9 |
| 36 | 1523.5 | 1589.8 | 1656.6 | 1724.0 | 1792.1 | 1860.7 | 1930.1 |
| 37 | 1524.7 | 1590.9 | 1657.8 | 1725.2 | 1793.2 | 1861.9 | 1931.3 |
| 38 | 1525.8 | 1592.0 | 1658.9 | 1726.3 | 1794.3 | 1863.0 | 1932.4 |
| 39 | 1526.9 | 1593.2 | 1660.0 | 1727.4 | 1795.5 | 1864.2 | 1933.6 |
| 40 | 1528.0 | 1594-3 | 1661.1 | 1728.6 | 1796.6 | 1865.3 | 1934-7 |
| 41 | 1529.1 | 1595.4 | 1662.2 | 1729.7 | 1797.8 | 1866.5 | 1935.9 |
| 42 | 1530.2 | 1596.5 | 1663.4 | 1730.8 | 1798.9 | 1867.6 | 1937.1 |
| 43 | 1531.3 | 1597.6 | 1664.5 | 1731.9 | 1800.0 | 1868.8 | 1938.2 |
| 44 | 1532.4 | 1598.7 | 1665.6 | 1733.1 | 1801.2 | 1869.9 | 1939.4 |
| 45 | 1533-5 | 1599.8 | 1666.7 | 1734.2 | 1802.3 | 1871.1 | 1940.5 |
| 46 | 1534.6 | 1600.9 | 1667.8 | 1735.3 | 1803.5 | 1872.2 | 1941.7 |
| 47 | 1535.7 | 1602.0 | 1669.0 | 1736.5 | 1804.6 | 1873.4 | 1942.9 |
| 48 | 1536.8 | 1603.1 | 1670.1 | 1737.6 | 1805.7 | 1874.5 | 1944.0 |
| 49 | 1537-9 | 1604.3 | 1671.2 | 1738.7 | 1806.9 | 1875.7 | 1945.2 |
| 50 | 1539.0 | 1005.4 | 1072.3 | 1739.9 | 1808.0 | 1876.8 | 1946.4 |
| 51 | 1540.1 | 1606.5 | 1673.4. | 1741.0 | 1809.2 | 1878.0 | 1947-5 |
| 52 | 1541.2 | 1607.6 | 1674.6 | 1742.1 | 1810.3 | 1879.2 | 1948.7 |
| 53 | 1542.3 | 1608.7 | 1675.7 | 1743-2 | 1811.4 | 1880.3 | 1949.9 |
| 54 | 1543.4 | 1609.8 | 1676.9 | 1744.4 | 1812.6 | 1881.5 | 1951.0 |
| 55 | 1544-5 | 1610.9 | 1678.0 | 1745.5 | 1813.7 | 1882.6 | 1952.2 |
| 56 | 1545.6 | 1612.0 | 1679.1 | 1746.6 | 1814.9 | 1883.8 | 1953.4 |
| 57
58 | 1546.7 | 1613.1 | 1680.2 | 1747.8 | 1816.0 | 1884.9 | 1954-5 |
| | 1547.8 | 1614.3 | 1681.3 | 1748.9 | 1817.2 | 1886.1 | 1955.7 |
| 59 | 1548.9 | 1615.4 | 1682.4 | 1750.0 | 1818.3 | 1887.2 | 1956.9 |
| - | | | Equation | n Subtract | ive. | | |
| - | 10.8 | 11.4 | 11.6 | 12.1 | 12.4 | 12.8 | 1 13.2 |

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| M
O
I
2 | Miles. | Miles. | Miles. | Miles. | | | |
|------------------|---------|--------|----------|------------|--------|---------|--------|
| 1 | | | | | Miles. | Miles. | Miles. |
| 1 | | 2028.4 | 2099.6 | 2171.5 | 2244.3 | 2318.0 | 2392.7 |
| 2 | 1959.2 | 2029.6 | 2100.7 | 2172.7 | 2245.5 | 2319.3 | 2393.9 |
| - | 1960.4 | 2030.7 | 2101.9 | 2173.9 | 2246.8 | 2320.5 | 2395.2 |
| 3 | 1961.5 | 2031.9 | 2103.1 | 2175.1 | 2248.0 | 2321.7 | 2396.4 |
| 4 | 1962.7 | 2033.1 | 2104.3 | 2176.3 | 2249.2 | 2323.0 | 2397.7 |
| 5 | 1963.9 | 2034.3 | 2105 5 | 2177.5 | 2250.4 | 2324.4 | 2398.9 |
| 5 | 1965.0 | 2035.5 | 2106.7 | 2178.7 | 2251.6 | 2325.2 | 2400.2 |
| 7 | 1966.2 | 2036.7 | 2107.9 | 2180.0 | 2252.9 | 2326.7 | 2401.4 |
| 7 8 | 1967.4 | 2037.8 | 2109.1 | 2181.2 | 2254.1 | 2327 9 | 2402.7 |
| 9 | 1968.5 | 2039.0 | 2110.3 | 2182.4 | 2255.3 | 2329.2 | 2403.9 |
| 10 | 1.969.7 | 2040.2 | 2111.5 | 2183.6 | 2256.5 | 2330.4 | 2405.2 |
| 11 | 1970.9 | 2011.4 | 2112.7 | 2184.8 | 2257.8 | 2331.6 | 2406.4 |
| 12 | 1972.0 | 2042.0 | 2113.9 | 2185.0 | 2259.0 | 2332.9 | 2407.7 |
| 13 | 1973.2 | 2043.8 | 2115.1 | 2187.2 | 2260.2 | 2334.1 | 2409 0 |
| 14 | 1974.4 | 2044.9 | 2116.3 | 2188.4 | 2261.4 | 2335.3 | 2410.2 |
| 15 | 1975.6 | 2046.1 | 2117.5 | 2189.6 | 2262.7 | 2336.6 | 2411.9 |
| 16 | 1976.8 | 2047.3 | 2118.7 | 2190.8 | 2263.9 | 2337.8 | 2412.7 |
| 17 | 1977-9 | 2048.5 | 2119.8 | 2192.9 | 2265.1 | 2339.0 | 2414.0 |
| 18 | 1979.1 | 2049.7 | 2121.0 | 2193.3 | 2265.3 | 2340.3 | 2415.2 |
| 19 | 1980.3 | 2050.8 | 2122.2 | 2194.4 | 2267.6 | 2341.5 | 2416. |
| 20 | 1981.4 | 2052,0 | 2123.4 | 2195.7 | 2268.8 | 2342.8 | 2417.8 |
| 21 | 1982.6 | 2053.2 | 2124.6 | 2196.9 | 2270.0 | .2344.0 | 2419.0 |
| 22 | 1983.7 | 2054.4 | 2125.8 | 2198.1 | 2271.2 | 2345.3 | 2420. |
| 23 | 1984.9 | 2055.6 | 2127.0 | 2199.3 | 2272.5 | 2346.5 | 2421.5 |
| 24 | 1986 1 | 2056.8 | 2128.2 | 2250.5 | 2273.7 | 2347.8 | 2422.8 |
| 25 | 1987-3 | 2058.0 | 2129.4 | 2201.7 | 2274.9 | 2349.0 | 2424.0 |
| 26 | 1988.4 | 2059.1 | 2130.6 | 2203.0 | 2276.1 | 2350.2 | 2425. |
| 27 | 1989.6 | 2000.3 | 2131.8 | 2204.2 | 2277.4 | 2351.5 | 2426. |
| 28 | 1990.8 | 2061.5 | 2133.0 | 2205.4 | 2278.6 | 2352.7 | 2427. |
| 29 | 1992.0 | 2062.7 | 2134.2 | 2206.6 | 2279.8 | 2354.0 | 2429. |
| | | | Equation | n Subtract | live. | | |

| 7 | | | 1 | 1 | 1 | 1 | 1 - | | | |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--|--|--|
| D. | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | | |
| - | | - | - | _ | - | - | - | | | |
| M | Miles. | | | |
| 0 | 1993.1 | 2063.9 | 2135.4 | 2207.8 | 2281.0 | 2355.2 | 2430.3 | | | |
| 1 | 1994.3 | 2065.1 | 2136.6 | 2209.0 | 2282.3 | 2356.5 | 2431.6 | | | |
| 2 | 1995.5 | 2066.2 | 2137.8 | 2210.2 | 2283.5 | 2357.7 | 2432.0 | | | |
| 33 | 1996.6 | 2067.4 | 2139.0 | 2211.4 | 2284.7 | 2358.9 | 2434.1 | | | |
| 4 | 1997.8 | 2068:6 | 2140.2 | 2212.7 | 2286.0 | 2360.2 | 2435.4 | | | |
| 35 | 1999.0 | 2009.8 | 2141.4 | 2213.9 | 2287.2 | 2301.4 | 2436.7 | | | |
| 36 | 2000.2 | 2071.0 | 2142.6 | 2215.1 | 2288.4 | 2362.7 | 2437.9 | | | |
| 37 | 2001.3 | 2072.2 | 2143.8 | 2216.3 | 2239.7 | 2363.9 | 2439. | | | |
| 38 | 2002.5 | 2073.4 | 2145.0 | 2217.5 | 2290.9 | 2365.2 | 2440. | | | |
| 39 | 2003.7 | 2074.6 | 2140.2 | 2218.7 | 2292.1 | 2365.4 | 2441.7 | | | |
| 10 | 2004.9 | 2075.7 | 2147.4 | 22199 | 2293.3 | 2367.7 | 2443.0 | | | |
| 41 | 2006.0 | 2076.9 | 2148.6 | 2221.2 | 2294.6 | 2368.9 | 2444.2 | | | |
| 12 | 2007.2 | 2078.1 | 2149.8 | 2222.4 | 2295.8 | 2370.2 | 2445 | | | |
| 43 | 2008.4 | 2079.3 | 2151.0 | 2223.6 | 2297.0 | 2371.4 | 2446.0 | | | |
| 44 | 2009.6 | 2080.5 | 2152.2 | 2224.8 | 2298-3 | 2372.7 | 2448. | | | |
| 45 | 2010.7 | 2051.7 | 2153.4 | 2220.0 | 2299.5 | 2373.9 | 2449. | | | |
| 46 | 2011.9 | 2082.9 | 2154.6 | 2227.2 | 2300.7 | 2375.2 | 2450. | | | |
| 47 | 2013.1 | 2084.1 | 2155.8 | 2228.5 | 2302.0 | 2376.4 | 2451. | | | |
| 48 | 2014.3 | 2085.3 | 2157-5 | 2229.7 | 2303.2 | 2377.7 | 2453. | | | |
| 49 | 2015.4 | 2086.5 | 2158.2 | 2230 9 | 2304.4 | 2378.9 | 24.54. | | | |
| 50 | 2010.6 | 2087.7 | 2159.4 | 2232.1 | 2305.7 | 2380.1 | 2455. | | | |
| 51 | 2017.8 | 2088.9 | 2160.7 | 2233.3 | 2306.9 | 2381.4 | 2450. | | | |
| 52 | 2019.0 | 2090.1 | 2161.9 | 2234.6 | 2308.1 | 2382.6 | 2458. | | | |
| 53 | 2020.2 | 2091.3 | 2163.1 | 2235.8 | 2309.4 | 2383.9 | 2459. | | | |
| 54 | 2021.3 | 2092.5 | 2164.3 | 2237.0 | 2310.6 | 2385.1 | 2460. | | | |
| 55 | 2022.5 | 2093.7 | 2165.5 | 2238.2 | 2311.8 | 2386.4 | 2461. | | | |
| 56 | 2023.7 | 2094.0 | 2166.7 | 2239.4 | 2313.1 | 2387.6 | 2463. | | | |
| 57 | 2024.9 | 2096.1 | 2167.9 | 2240.7 | 2314.3 | 2388.9 | 2464. | | | |
| 58 | 2026.0 | 2097.3 | 2169.1 | 2241.9 | 2315.5 | 2390.2 | 2465. | | | |
| 59 | 2027.2 | 2098.5 | 2170.3 | 2243.1 | 2316.7 | 2391.4 | 2467.0 | | | |
| Equation subtractive. | | | | | | | | | | |
| - | 13.6 | 14.0 | 14.3 | 14.7 | 15.1 | 15.5 | 1 15. | | | |

Gg

| D. | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
|---------|--------|--------|----------|--------|--------|--------|--------|
| м | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| -0 | 2468.3 | 2545.0 | 2622.7 | 2701.6 | 2781.7 | 2863.1 | 2945. |
| 1 | 2469.6 | 2546.2 | 2624.0 | 2702.9 | 2783.1 | 2864.5 | 2947 |
| 2 | 2470.8 | 2547.5 | 2625.3 | 2704.3 | 2784.4 | 2865.8 | 2948. |
| 3 | 2472.1 | 2548.8 | 2626.6 | 2705.6 | 2785.8 | 2867.2 | 2950. |
| 3 4 5 6 | 2473.4 | 2550.1 | 2627.9 | 2706.9 | 2787.1 | 2868.5 | 2951. |
| 5 | 2474.6 | 2551.4 | 2629.2 | 2708.3 | 2788.5 | 2870.0 | 2952. |
| 6 | 2475.9 | 2552.7 | 2630.5 | 2709.6 | 2789.8 | 2871.3 | 2954. |
| 78 | 2477.1 | 2554.0 | 2631.9 | 2710.9 | 2791.2 | 2872.7 | 2955. |
| 8 | 2478.5 | 2555.3 | 2633.2 | 2712.2 | 2792.5 | 2874.1 | 2957.0 |
| 9 | 2479.7 | 2556.6 | 2634.5 | 2713.6 | 2793.8 | 2875.4 | 2958. |
| 10 | 2481.0 | 2557.8 | 2635.8 | 2714.9 | 2795.1 | 2876.8 | 2959. |
| 11 | 2482.3 | 2559.1 | 2637.1 | 2716.2 | 2796.5 | 2878.2 | 2961. |
| 12 | 2483.5 | 2560.4 | 2638.4 | 2717.5 | 2797.9 | 2879.5 | 2962. |
| 13 | 2484.8 | 2561.7 | 2639.7 | 2718.9 | 2799.3 | 2880.9 | 2963. |
| 4 | 2486.1 | 2563.0 | 2641.0 | 2720.2 | 2800.6 | 2882.3 | 2965. |
| 15 | 2487.4 | 2564.3 | 2642.3 | 2721.5 | 2802.0 | 2883.7 | 2965. |
| 6 | 2488.6 | 2565.6 | 2643.6 | 2722.9 | 2803.3 | 2885.0 | 2968. |
| 7 | 2489.9 | 2566.9 | 2644.9 | 2724.2 | 2804.7 | 2886.4 | 2969. |
| 8 | 2491.2 | 2568.2 | 2646.3 | 2725.5 | 2806.0 | 2387.8 | 2970. |
| 9 | 2492 5 | 2569.5 | 2647.6 | 2726.9 | 2807.4 | 2889.2 | 2972. |
| 0 | 2493.7 | 2570.7 | 2648.9 | 2728.2 | 2808.7 | 2890.5 | 2973. |
| 1 | 2495.0 | 2572.0 | 2650.2 | 2729.5 | 2810.1 | 2891.9 | 2975. |
| 2 | 2496.3 | 2573.3 | 2651.5 | 2730.8 | 2811.4 | 2893.3 | 2976. |
| 3 | 2497.6 | 2574.6 | 2652.8 | 2732.2 | 2812.8 | 2894.7 | 2977-9 |
| 4 | 2498.8 | 2575.9 | 2654.1 | 2733.5 | 2814.1 | 2896.0 | 2979- |
| 5 | 2500.1 | 2577.2 | 2655.4 | 2734.8 | 2815.5 | 2897-4 | 2980. |
| 6 | 2501.4 | 2578.5 | 2656.8 | 2736.2 | 2816.8 | 2898.8 | 2982. |
| 7 | | 2579.8 | 2658.1 | 2737.5 | 2818.2 | 2900.2 | 2983. |
| 8 | 2503.4 | 2581.1 | 2659.4 | 2738.8 | 2819.5 | 2901.5 | 2984.9 |
| 9 | 2505.2 | 2582.4 | 2660.7 | 2740.2 | 2820.9 | 2902.9 | 2986. |
| - | | | Equation | | | | |

| 16.0 | 16.4 | 16.7 | 17.0 | 17.4 | 17.7 1 | 18.0 |
|------|------|------|------|------|--------|------|
| | | | - | | | |

| D. | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
|----|--------|--------|----------|------------|--------|--------|--------|
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| _ | | | 2662.0 | | 2000 | | |
| 30 | 2506.5 | 2583.7 | | 2741.5 | 2822.3 | 2904.3 | 2987.7 |
| 31 | 2507.8 | 2585.0 | 2663.3 | 2742.9 | 2823.6 | 2905.7 | 2989.1 |
| 32 | 2509.0 | 2586.3 | 2664.6 | 2744.2 | 2825.0 | 2907.1 | 2990.5 |
| 33 | 2510.3 | 2587.6 | 2666.0 | 2745.5 | 2826.3 | 2908.4 | 2991.9 |
| 34 | 2511.6 | 2588.9 | 2667.3 | 2746.9 | 2827.7 | 2909.7 | 2993-3 |
| 35 | 2512.9 | 2590.2 | 2668.6 | 2748.2 | 2829.0 | 2911.2 | 2994.7 |
| 36 | 2514.2 | 2591.5 | 2669.9 | 2749.5 | 2830.4 | 2912.6 | 2996.1 |
| 37 | 2515.4 | 2592.8 | 2671.2 | 2750.9 | 2831.8 | 2914.0 | 2997.5 |
| 38 | 2516.7 | 2594.1 | 2672.5 | 2752.2 | 2833.1 | 2915.3 | 2998.9 |
| 39 | 2518.0 | 2595.4 | 2673.9 | 2753.5 | 2834.5 | 2916.7 | 3000.3 |
| 40 | 2519.3 | 2596.7 | 2675.1 | 2754.9 | 2835.8 | 2918.1 | 3001.8 |
| 41 | 2520.6 | 2598.0 | 2676.5 | 2756.2 | 2837.2 | 2919.5 | 3003.2 |
| 42 | 2521.8 | 2599.3 | 2677.8 | 2757.6 | 2838.6 | 2920.9 | 3004.6 |
| 43 | 2523.1 | 2600.6 | 2679.1 | 2758.9 | 2839.9 | 2922.3 | 3006.0 |
| 44 | 2524.4 | 2601.9 | 2680.5 | 2760.2 | 2841.3 | 2923.6 | 3007.4 |
| 45 | 2525.7 | 2603.2 | 2681.8 | 2761.5 | 2842.6 | 2925.0 | 3008.8 |
| 46 | 2527.0 | 2604.5 | 2683.1 | 2762.9 | 2844.0 | 2926.4 | 3010.2 |
| 47 | 2528.3 | 2605.8 | 2684.4 | 2764.3 | 2845.4 | 2927.8 | 3011.6 |
| 48 | 2529 5 | 2607.1 | 2685.7 | 2765.6 | 2846.7 | 2929.2 | 3013.0 |
| 49 | 2530.8 | 2608.4 | 2687.1 | 2766.9 | 2848.1 | 2930.6 | 3014.4 |
| 50 | 2532.1 | 2609.7 | 2688.4 | 2768.3 | 2849.5 | 2932.0 | 3015.8 |
| 51 | 2533.4 | 2611.0 | 2689.7 | 2769.6 | 2850.8 | 2933.3 | 3017.2 |
| 52 | 2534.7 | 2612.3 | 2691.0 | 2771.0 | 2852.2 | 2934.7 | 3018.7 |
| 53 | 2536.0 | 2613.6 | 2692.3 | 2772.3 | 2853.6 | 2936.1 | 3020.1 |
| 54 | 2537.2 | 2614.9 | 2693.7 | 2773.7 | 2854.9 | 2937.5 | 3021.5 |
| | | 2616.2 | | | | | |
| 56 | 2538.5 | 2617.5 | 2695.0 | 2775.0 | 2856.3 | 2938.9 | 3022.9 |
| | 2539.8 | 2618.8 | | 2776.4 | 2857.7 | 2940.3 | 3024-3 |
| 57 | 2541.1 | 2620.1 | 2697.6 | 2777.7 | 2859.1 | 2941.7 | 3025.7 |
| 59 | 2542-4 | 2621.4 | 2699.0 | 2779.0 | 2861.8 | 2943.1 | 3027.1 |
| , | 2543.7 | | 2,00.3 | 2780.4 | 200110 | 2944.4 | 3028.5 |
| | | | Equation | n subtract | live. | | |
| - | 16.2 | 16.6 | 16.9 | 17.2 | 17.6 | 17.8 | 18. |

 $^{\circ}$

| - | | | 1 | 1 | F | | _ |
|-----|--------|--------|----------|------------|--------|--------|--------|
| D. | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
| - | | - | | | - | - | - |
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| -0 | 3030.0 | 3115.6 | 3202.8 | 3291.6 | 3382.1 | 3474.5 | 3568.8 |
| 1 | 3031.4 | 3117.0 | 3204.2 | 3293.1 | 3383.6 | 3476.1 | 3570.4 |
| 2 | 3032.8 | 3118.5 | 3205.7 | 3294.6 | 3385.2 | 3477.6 | |
| 3 | 3034.2 | 3119.9 | 3207.2 | 3296.1 | 3386.7 | 3479.2 | 3573.6 |
| 4 | 3035.6 | 3121.4 | 3208.6 | 3297.5 | 3388.2 | 3480.7 | 3575.2 |
| 5 | 3037.2 | 3122.8 | 3210.1 | 3299.0 | 3389.7 | 3482.3 | 3576.8 |
| | 3038.4 | 3124.2 | 3211.6 | | 3391.3 | 3483.9 | 3578.4 |
| 7 8 | 3039.8 | | 3213.0 | 1 | | 3485.4 | 3580.0 |
| | 3041.3 | 3127.1 | 3214.5 | 3303.5 | 3394.3 | 3487.c | 3581.6 |
| 9 | 3042.7 | 3128.6 | 3216.0 | 3305.0 | 3395.9 | 3488.5 | 3583.2 |
| 10 | 3044.1 | 3130.0 | 3217.4 | 3306.5 | 3397.4 | 3490.1 | 3584.8 |
| 11 | 3045.5 | 3131.5 | 3218.9 | 3308.0 | | 3491.7 | 3586.4 |
| 12 | 3047.0 | | 3220.4 | 3309.5 | 3400.4 | 3493.2 | 3588.0 |
| 13 | 3048.4 | 3134.3 | 3221.9 | 3311.0 | 3402.0 | 3494.8 | 3589.5 |
| 14 | 3049.8 | | 3223.3 | 3312.5 | 3403.5 | 3496.3 | 3591.1 |
| 15 | 3051.2 | 3137.2 | 3224.8 | 3314.0 | 3405.0 | 3497.9 | 3592.7 |
| 16 | 3052.6 | | 3226.3 | 3315.5 | 3406.6 | 3499-5 | 3594-3 |
| 17 | 3054.1 | 3140.1 | 3227-7 | 3317.0 | 3408.1 | 3501.0 | 3595.9 |
| 18 | 3055.5 | 3141.6 | 3229.2 | 3318.5 | 3409.6 | 3502.6 | 3597.5 |
| 19 | 3056.9 | 3143.0 | 3230.7 | 3320.0 | 3411.2 | 3504.2 | 3599.1 |
| 20 | 3058.3 | 3144.5 | 3232.2 | 3321.5 | 3412.7 | 3505.7 | 3000.7 |
| 21 | 3059.7 | 3145.9 | 3233.6 | 3323.1 | 3414.2 | 3507.3 | 3602 3 |
| 22 | 3061.2 | 3147.4 | 3235.1 | 3324.6 | 3415.6 | 3508.9 | 3603.9 |
| 23 | 3062.6 | 3148.8 | 3236.6 | 3326.1 | 3417.3 | 3510.5 | 3605.5 |
| 24 | 3064.0 | 3150.3 | 3238.1 | 3327.6 | 3418.8 | 3512.0 | 3607.1 |
| 25 | 3065.4 | 3151.7 | 3239.5 | 3329.1 | 3420.4 | 3513.6 | 3608.7 |
| 26 | 3066.9 | 3153.2 | 3241.0 | | 3421.9 | 3515.1 | 3610.3 |
| 27 | 3068.3 | 3154.6 | 3242.5 | 3532.1 | 3423.5 | 3516.7 | 3611.9 |
| 28 | 3069.7 | 3156.1 | 3244.0 | 3333.6 | 3425.0 | 3518.3 | 3613.6 |
| 29 | 3071.1 | 3157.5 | 3245.5 | 3335.1 | 3426.5 | 3519.8 | 3615.2 |
| | | | Equation | n Subtract | ive. | | |
| .7, | 18.3 | 18.7 | 19.0 | 19.3. | 19.6 | 19.9 | 20.1 |

| D. | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
|----|--------|--------|----------|------------------|--------|--------|-------|
| - | - | - | - | | - | - | - |
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles |
| 10 | 3072.6 | 3159.0 | 3240.9 | 3336.6 | 3428.1 | 3521.4 | 3616. |
| 1 | 3074.0 | 3160.4 | 3248.4 | 3338.1 | 3429.6 | | 3618. |
| 2 | 3075.4 | 3161.9 | 3249.9 | 3339.6 | 3431.2 | 3524.6 | 3620. |
| 3 | 3076.9 | 3163.3 | 3251.4 | 3341.1 | 3432.7 | 3526.1 | 3621. |
| 4 | 3078.3 | 3164.8 | 3252.9 | 3342.7 | 3434.2 | 3527.7 | 3623. |
| 5 | 3079.7 | 3166.2 | 3254.4 | 3344.2 | 3435.8 | 3529.3 | 3624. |
| 6 | 3081.1 | 3167.7 | 3258.8 | 3345.7 | 3437-3 | 3530.9 | 3626. |
| 7 | 3082.5 | 3169.1 | 3257.3 | 3347.2 | 3438.9 | 3532.4 | 3628. |
| 8 | 3084.0 | 3170.6 | 3258.8 | 3348.7 | 3440.4 | 3534.0 | 3629. |
| 9 | 3085.4 | 3172.1 | 3260.3 | 3350.1 | 3442.0 | 3535.6 | 3631. |
| 0. | 3086.9 | 3173.5 | 3261.8 | 3351.7 | 3443.5 | 3537.2 | 3632. |
| 1 | 3088.3 | 3175.0 | 3263.3 | 3353.2 | 3445.0 | 3538.8 | 3634. |
| 2 | 3089.7 | 3176.4 | 3264.7 | 3354.8 | 3446.6 | 3540.3 | 3636. |
| 3 | 3091.2 | 3177.9 | 3266.2 | 3356.3 | 3448.1 | 3541.9 | 3637. |
| 4 | 3092.6 | 3179.3 | 3267.7 | 3357.8 | 3449.7 | 3543-5 | 3639. |
| 5 | 3094.0 | 3180.8 | 3269.2 | 3359.3 | 3451.2 | 3545.1 | 3640. |
| 6 | 3095.5 | 3182.3 | 3270.7 | 3360 8 | 3452.8 | 3544.7 | 3642. |
| 7 | 3096.9 | 3183.7 | 3272.2 | 3362.3 | 3454.3 | 3548.2 | 3644. |
| 8 | 3098.3 | 3185.2 | 3273.7 | 3363.9 | 3455.9 | 3549.8 | 3645 |
| 9 | 3099.8 | 3186.6 | 3275.2 | 3365.4 | 3457.4 | 3551.4 | 3647. |
| 0 | 3101.2 | 3188.1 | 3276.6 | 3366.9 | 3459.0 | | 3649. |
| 1 | 3102.6 | 3189.6 | 3278.1 | 3368.4 | 3460:5 | 3554.6 | 3650. |
| 2 | 3104.1 | 3191.0 | 3279.6 | 3369.9 | 3462.1 | 3556.2 | 3652. |
| 3 | 3105.6 | 3192.5 | 3281.1 | 3371.5 | 3463.6 | 3557.7 | 3653. |
| 4 | 3107.0 | 3194.0 | 3282.6 | 3373.0 | 3465.2 | 3559-3 | 3655. |
| 5 | 3108.4 | 3195.4 | 3284.1 | 3374-5 | 3466.7 | 3560.9 | 3657. |
| 6 | 3109.8 | 3195.9 | 3285.6 | 3376.0 | 3468.3 | 3562.5 | 3658. |
| 7 | 3111.2 | 3198.4 | 3287.1 | 3377.6 | 3469.8 | 3564.1 | 3660. |
| 9 | 3112.7 | 3199.8 | 3288.6 | 3379.1
3380.6 | 3471.4 | 3565.7 | 3662. |
| 7 | 3114.1 | 3201.3 | 3290.1 | 3380.0 | 3473.0 | 3567.3 | 3663. |
| | | -10- | Equation | Subtracti | ve. | | |
| _ | 18.5 | 18.81 | | | 119 | | |

| D. | 52 | 53 | 54 | 55 | 56 | 57 | 58 |
|---------|--------|-----------|----------|------------------|--------|--------|------------------|
| M | Miles | Miles. | Miles | . Miles. | Miles. | Miles. | Miles |
| _ | - | - | - | | - | | |
| 0 | 10 | 131 3 | | | | | |
| I | 3666.0 | 101 3 | 3866. | 137 7 | | | 4296. |
| 2 | 3668. | | | | | 4186.3 | |
| 3 | 3670.1 | 10. | | | | | 4300.0 |
| 4 | 3671.7 | - | | | 4081.1 | 4190.0 | 4301.0 |
| 3 4 5 6 | 3673.4 | | 3873.2 | 3976.7 | 4082.9 | 4191.8 | 4303.8 |
| | 3675.0 | 3773.8 | | 3978.5 | | | 1 0 0 |
| 7 | 3676.6 | 101121 | | 3980.2 | 4086.5 | 4195.5 | |
| | 3678.2 | 10111 | | 3982.0 | | 4197.4 | |
| 9 | 3679.9 | 3778.8 | 3880.0 | 3983 7 | 4090.1 | 4199.2 | |
| 0 | 3681.5 | 3780.4 | 3881.7 | | | | 4313.2 |
| I | 3683.1 | 3782.1 | 3883.4 | | | | |
| 2 | 3684.8 | 3783.8 | 3885.1 | 3989.0 | | | 4317.0 |
| 3 | 3685.4 | 3785.5 | 3886.8 | 3990.7 | | 4206.6 | 4318.9 |
| 4 | 3688.0 | 3787.1 | 3888.6 | 3992.5 | 4099.1 | 4208.4 | 4320.8 |
| 5 | 3689.7 | 3788.8 | 3890.3 | | 4100.9 | 4210.3 | 4322.7 |
| 6 | 3691.3 | 3790.5 | 3892.0 | | | 4212.1 | 4324.6 |
| 7 | 3692.9 | 3792.1 | 3893.7 | | 4104.5 | 4214.0 | 4326.5 |
| 8 | 3694.6 | 3793.8 | 3895.8 | 3999.5 | 4106.3 | 4215.8 | 4328.4 |
| 9 | 3696.2 | 3795.5 | 3897.1 | 4001.3 | 4108.1 | 4217.7 | 4330.3 |
| 0 | 3697.8 | 3797.2 | 3898.8 | 4003.0 | 4109.9 | | |
| 1 | 3699.5 | 3798.8 | 3900.5 | 4004.8 | 4111.7 | 4219.5 | 4332.2 |
| z | 3601.1 | 3800.5 | 3902.3 | 4006.5 | 4113.5 | 4223.2 | 4334-2 |
| 3 | 3602.7 | 3802.2 | 3904.0 | 4008.3 | 4115.3 | 4225.1 | 4336.1
4338.0 |
| | 3704.4 | 3803.9 | 3905.7 | 4010.0 | 4117.1 | 4227.0 | |
| - 1 | 3706.0 | 3805.5 | | | | | 4339.9 |
| | 3707.7 | 3807.2 | 3907.4 | 4011.8 | 4118.9 | 4228.8 | 4341.8 |
| - | 3709.3 | 3808.9 | 3909:1 | 4013.6 | 4120.7 | 4230.7 | 4343-7 |
| | 3710.9 | 3810.6 | 3910.9 | 4015.3 | 4122.5 | 4232.5 | 4345.6 |
| | 3712.6 | 3812.3 | 3914.3 | 4017.1 | 4124.3 | | 4347-5 |
| 1. | 1 | , , , , , | 39.4.3 | 4010.9 | 4120.1 | 4236.2 | 4349-4 |
| | 7 | - | Equation | <i>Subtracti</i> | ve. | | |
| | | | 4 | , | | | |

|). | 52 | 53 | 54 | 55 | 56 | 57 | 58 |
|----|----------|---------|----------|----------|--------|---------|---------|
| N | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| " | (411103. | Warnes. | | WALLES. | | Wantes. | WILLES. |
| 0 | 3714.2 | 3813.9 | 3910.0 | 4020.6 | 4127.9 | 4238.1 | 4351. |
| 1 | 3715.9 | 3815.6 | 3917.7 | 4022.4 | 4129.7 | 4240.0 | 4353. |
| 2 | 3717-5 | 3817.3 | 3919.5 | 4024.2 | 4131.6 | 4241.8 | 4355. |
| 13 | 3719.2 | 3819.0 | 3921.2 | 4025.9 | 4133-4 | 4243-7 | 4357. |
| 4 | 3720.8 | 3820.7 | 3922.5 | 4027.7 | 4135.2 | 4245.6 | 4359 |
| 35 | 3722.4 | 3822.3 | 3924.6 | 4029.5 | 4137.0 | 4247.4 | 4360. |
| 36 | 3724-1 | 3824.0 | 3926.4 | 4031.2 | 4138.8 | 4249.3 | 4362. |
| 17 | 3725.7 | 3825.7 | 3928.1 | 4033.0 | 4140.6 | 4251.2 | 4364. |
| 18 | 3727-4 | 3827.4 | 3929.8 | 4034.8 | 4142.5 | 4253.0 | 4366. |
| 9 | 3729.0 | 3829.1 | 3930.5 | 4036.6 | 4144.3 | 4254.9 | 4368. |
| 10 | 3730.7 | 3830.8 | 3933-3 | 4038.3 | 4146.1 | 4256.8 | 4370. |
| 1 | 3732.3 | 3832.5 | 3935.0 | 4040.1 | 4147.9 | 4258.6 | 4374. |
| 2 | 3734.0 | 3834.2 | 3936.7 | 4041.9 | 4149.7 | 4260.5 | 4374- |
| 3 | 3735.6 | 3835.8 | 3938 5 | 4043.6 | 4151.6 | 4262.4 | 4376. |
| 14 | 3737.3 | 3837.5 | 3940.2 | 4045.4 | 4153.4 | 4264.3 | 4378. |
| 15 | 3738.9 | 3839.2 | 3941.9 | 4947.2 | 4155.2 | 4206.1 | 4380. |
| 6 | 3740.6 | 3840.9 | 3943-7 | 4049.0 | 4157.0 | 4268.0 | 4382. |
| 7 | 3742.2 | 3842.6 | 3945.4 | 4050.8 | 4158.8 | 4259.9 | 4384. |
| 8 | 3743.9 | 3844.3 | 3947-1 | 4052.5 | 4160.7 | 4271.8 | 4385. |
| 9 | 3745.6 | 3846.0 | 3948.9 | 4054.3 | 4162.5 | 4273.6 | 4387. |
| 0 | 3747-2 | 3847.7 | 3950.6 | 4056.1 | 4104.3 | 4275.5 | 4389. |
| 1 | 3748.9 | 3849.4 | 3952.3 | 4057.9 | 4166.2 | 4477.4 | 4391. |
| 2 | 3750.5 | 3851.1 | 3954.1 | 4059.7 | 4168.0 | 4279-3 | 4393. |
| 3 | 3752.2 | 3852.8 | 3955.8 | 4061.4 | 4169 8 | 4281.1 | 4395. |
| 4 | 3753.8 | 3854.5 | 3957.6 | 4063.2 | 4171.7 | 4283.0 | 4397. |
| 5 | 3755-5 | 3856.2 | 3959-3 | 4065.0 | 4173.5 | 4284.9 | 4399. |
| 6 | 3757-2 | 3857.9 | 3901.0 | 4065.8 | 4175.3 | 4286.8 | 4401. |
| 7 | 3758.8 | 3859.6 | 3962.8 | 4068.6 | 4177.2 | 4288.7 | 4403. |
| 8 | 3760.5 | 3861.3 | 3964.5 | 4070.4 | 4179.0 | 4290.6 | 4405. |
| 9 | 3762.2 | 3863.0 | 3906.3 | 4072.2 | 4180.8 | 4292.5 | 4407. |
| _ | | | Faustin | China | ione | | |
| | | | Lquation | Subtract | 1.06. | | |

| D. | 59 | 60 | 61 . | 62 | 63 | 64 | 65 |
|-----|--------|---------|----------|------------|--------|--------|--------|
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0 | 4409.2 | 4527.4 | 4649.3 | 4775.0 | 4905.0 | 5039.5 | 5178.8 |
| 1 | 4411.1 | 4529.4 | 4651.3 | 4777.1 | 4907.2 | 5041.7 | 5181.2 |
| 2 | 4413.1 | 4531.4 | 4653.4 | 4779.3 | 4909.4 | 5044.0 | 5183.6 |
| 3 | 4415.0 | 4533.4 | 4655.5 | 4781.4 | 4911.6 | 5046.3 | 5186.0 |
| 4 | 4417.0 | 4535.4 | 4657.5 | 4783.5 | 4913.8 | 5048.6 | 5188. |
| 5 | 4418.9 | 4537.4. | 4659.6 | 4785.7 | 4916.0 | 5050.9 | 5190.7 |
| 6 | 4420.8 | 4539.4 | 4661.7 | 4787.8 | 4918.2 | 5053.2 | 5193. |
| 7 8 | 4422.8 | 4541.4 | 4663.7 | 4790.0 | 4920.4 | 5055.5 | 5195.4 |
| | 4424.7 | 4543.4 | 4665.8 | 4792 1 | 4922.6 | 5057.7 | 5197.8 |
| 9 | 4426.7 | 4545.4 | 4667.9 | 4794.2 | 4924.8 | 5060.0 | 5200.2 |
| 10 | 4428.6 | 4547.5 | 4669.9 | 4796.4 | 4927.1 | 5062.3 | 5202.0 |
| 11 | 4430.6 | 4549.5 | 4672.0 | 4798.5 | 4929.3 | 5064.6 | 5205.0 |
| 12 | 4432.5 | 4551.5 | 4674.1 | 4800.7 | 4931.5 | 5066.9 | 5207. |
| 13 | 4434.5 | 4553.5 | 4676.2 | 4802.8 | 4933.7 | 5069.2 | 5209.7 |
| 14 | 4436.4 | 4555.5 | 4678.2 | 4804.9 | 4935.9 | 5071.5 | 5212. |
| 15 | 4438.4 | 4557.5 | 4680.3 | 4807.1 | 4938.1 | 5073.8 | 5214. |
| 16 | 4440.4 | 4559.5 | 4682.4 | 4809.2 | 4940.4 | 5076.1 | 5216. |
| 17 | 4442.3 | 4561.5 | 4684.5 | 4811.4 | 4942.6 | 5078.4 | 5219. |
| 18 | 4444.3 | 4563.6 | 4686.6 | 4813.5 | 4944.8 | 5080.7 | 5221.7 |
| 19 | 4446.2 | 4565.6 | 4688.6 | 4815.7 | 49+7.0 | 5083.0 | 5224. |
| 20 | 4148.2 | 4567.6 | 4690.7 | 4817.8 | 4949-3 | 5085.3 | 5226. |
| 21 | 4450.2 | 4569.6 | 4692 8 | 4820.0 | 4951.5 | 5087.7 | 5228. |
| 22 | 4452.1 | 4571.6 | 46949 | 4822.2 | 4953.7 | 5090.0 | 5231. |
| 23 | 4454.1 | 4573.7 | 4697.0 | 4824.3 | 4956.0 | 5092.3 | 5233.7 |
| 24 | 4456.0 | 4575.7 | 4699.1 | 4826.5 | 4958.2 | 5094.6 | 5236. |
| 25 | 4458.0 | 4577.7 | 4701.2 | 4828.6 | 4960.4 | 5096.9 | 5238. |
| 26 | 4460.0 | 4579.7 | 4703.2 | 4830.8 | 4962.7 | 5099.2 | 5240.0 |
| 27 | 4461.9 | 4581.8 | 4705.3 | 4832.9 | 4964.9 | 5101.5 | 5243. |
| 28 | 4463.9 | 4583.8 | 4707.4 | 4835.1 | 4967.1 | 5103.9 | 5245. |
| 29 | 4466.0 | 4585.8 | 4709.5 | 4837-3 | 4969.4 | 5106.2 | 5248. |
| | , | | Equation | n subtract | ive. | | |

| - | 1 | 1 | 1 | , | 1 | 7 | , |
|-----|--------|--------|----------|-----------|--------|-------------|--------|
| D. | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| - | - | | - | - | - | - | - |
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles |
| 30 | 4467.8 | 4587.8 | 4711.6 | | | 5108.5 | 5250. |
| 31 | 4469.8 | 4589.9 | 4713.7 | 4841.6 | 4973.9 | 5110.8 | 5252. |
| 32 | 4471.8 | 4591.9 | 4715.8 | | | 5113.1 | 5255. |
| 33 | 4473.8 | 4593.9 | | | | 5115.5 | 5257. |
| 34 | 4475.8 | 4590.0 | 4720.0 | | 4980.6 | 5117.8 | 5260. |
| 35 | 4477-7 | 4598.0 | 4722.6 | | 4982.8 | 5120.1 | 5262.0 |
| 36 | 4479.7 | 4600.1 | 4724.2 | | 4985.1 | 5122.5 | 5265. |
| 37 | 4481.7 | 4602.1 | 4726.3 | | 4987.3 | 5124.8 | 5267 |
| 38 | 4483.6 | 4604.1 | 4728.4 | 4856.8 | 4989.6 | 5127.1 | 5269. |
| 39 | 4485.6 | 4506.2 | 4730.5 | 4859.0 | 4991.8 | 5129.8 | 5272. |
| 0 | 4487.6 | 4508.2 | 4732.6 | 4861.2 | 4994.1 | 5131.8 | 5274. |
| 11 | 4489.6 | 4610.3 | 4734.7 | 4863.3 | 4996.3 | 5134.1 | 5277. |
| 2 | 4491.6 | 4612.3 | 4736.9 | 4865.5 | 4998.6 | 5136.5 | 5279. |
| 13 | 4493.5 | 4614.3 | 4739.0 | 4867.7 | 5000.9 | 5138.8 | 5282.0 |
| 14 | 4495.5 | 4616.4 | 4741.1 | 4869.9 | 5003.1 | 514 2 | 5284.4 |
| 5 | 4497-5 | 46.8.4 | 4743.2 | 4872.1 | 5005.4 | 5143.5 | 5286.8 |
| | 4499.5 | 4620.5 | 4745.3 | 4874.3 | 5007.6 | 5145.9 | 5289. |
| 7 | 4501.5 | 4622.5 | 4747.4 | 4876.4 | 5009.9 | 5148.2 | 5291. |
| | 4503.5 | 4624.6 | 4749.5 | 4878.6 | 5012.2 | 5150.6 | 5294.2 |
| - 1 | 4505.5 | 4626.6 | 4751.7 | 4880.8 | 5014.4 | 5152.9 | 5296.6 |
| 0 | 4507.5 | 4628.7 | 4753.8 | 4882.0 | 5016.7 | 5155.3 | 5299.0 |
| 1 | 4509.4 | 4630.7 | 4755.9 | 4885.2 | 5019.0 | 5157.6 | 5301.5 |
| 2 | 4511.4 | 4632.8 | 47;8.0 | 4887.4 | 5021.2 | 5160.0 | 5303.9 |
| | 4513.4 | 4634.8 | 4760.1 | 4889.6 | 5023.5 | 5162.3 | 5306.4 |
| | 4515.4 | 4636.9 | 4762.3 | 4891.1 | 5025.8 | 5164.7 | 5308.8 |
| 5 | 4517.4 | 4639.0 | 4764.4 | 4894.0 | 5048.1 | 5.67.0 | 5311.3 |
| 6 | 4519.4 | 4641.0 | 4766.5 | 4896.2 | 5030.3 | 5169.4 | 5313.7 |
| 7 | | 4643.1 | 4768.6 | 4898.4 | 5032.6 | 5171.8 | 5316.2 |
| | 4523.4 | 4645.1 | 4770.8 | 4900.6 | 5034.9 | 5174.1 | 5318.6 |
| 9 | 4525.4 | 4647.2 | 4772.9 | 4902.8 | 5037.2 | 5176.5 | 5321.1 |
| | | | Equation | Subtracti | ive. | or value of | • |
| - | 22.3 | 22.6 | 22.8 | 23.0 | 23.2 | 23.4 | 23.6 |

H h

| D. | 66 | 67 | 68 | 69 | 70 | 71 | 72 |
|-----|--------|--------|---------------|-----------|----------|----------|---------|
| м | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| " | Miles. | WHICS. | IVIIICS. | 1411103. | 1411103. | 1411165. | willes. |
| 0 | 5323.6 | 5474.0 | 5630.9 | 5794.6 | 5966.0 | 6145.7 | 6334.9 |
| 1 | 5326.0 | 5476.6 | 5633.5 | 5797.4 | 5958.9 | 6148.8 | 6338.1 |
| 2 | 5328.5 | 5479.2 | 5636.2 | 5800.2 | 5971.8 | 6151.9 | 6341.4 |
| 3 | 5330.9 | 5481.7 | 5638.9 | 5803.0 | 5974.7 | 6155.0 | 6344.6 |
| 5 6 | 5333.4 | 5484.3 | 5641.5 | 5805.8 | 5977-7 | 6158.0 | 6347.8 |
| 5 | 5335.9 | 5486.9 | 5644.2 | \$08.6 | 5980.6 | 6161.1 | 6351.1 |
| 6 | 5338.5 | 5489.4 | 5646.9 | 5811.4 | 5983.5 | 6164.2 | 6354. |
| 7 8 | 5340.8 | 5492.0 | 5649.0 | 5814.2 | 5986.5 | 6167.3 | 0357.6 |
| | 5343.3 | 5494.6 | 5652.3 | 5817.0 | 5989.4 | 6170.4 | 6360. |
| 9 | 5345.7 | 5497-1 | 5655.0 | 5819.8 | 5992.4 | 6173.5 | 6364. |
| 10 | 5348.2 | 5499-7 | 5657.6 | 5822.6 | 5995-3 | 6176.6 | 6367. |
| 11 | 5350.7 | 5502.3 | 5660.3 | 5825.4 | 5998.3 | 6179.7 | 6370. |
| 12 | 5353.2 | 5504.9 | 5663.0 | 5828.2 | 6001.2 | 6182.8 | 6373. |
| 13 | 5355.6 | 5507.5 | 5665.7 | 5831.0 | 6004.2 | 6185.9 | 6377. |
| 14 | 5358.1 | 5510.0 | 5668.4 | 5833.9 | 6007.1 | 6189.0 | 6380. |
| 15 | 5360.6 | 55126 | 5671.1 | 5836.7 | 6010.1 | 6192.1 | 0383. |
| 16 | 5363.1 | 5515.2 | 5673.8 | 5839.5 | 6013.0 | 6195.2 | 6387.0 |
| 17 | 5365.6 | | 5676.5 | 5842.3 | 6016.0 | 6198.3 | 6390. |
| 18 | 5368.1 | 5520.4 | 5679.2 | 5845.2 | 6019.0 | 6201.4 | 6393. |
| 19 | 5370.5 | 5523.0 | 5681.9 | 5848.0 | 6021.9 | 6204.6 | 6396. |
| 20 | 5373.0 | 5525.6 | 5684.6 | | 6024.9 | 6207.7 | 6400. |
| 21 | 5375.5 | 5528.2 | | 5853.7 | 6027.9 | 6210.8 | 6403. |
| 22 | 53780 | | | | 6030.8 | 6213.9 | 6406. |
| 23 | 5380.5 | 5533.4 | 5692.8 | | 6032.8 | 6217.1 | 6410. |
| 24 | 5383.0 | | 5695.5 | 5862.2 | 6036.8 | 6220.2 | 6413. |
| 25 | 5385.5 | 5538.6 | 5698.2 | 1-865.0 | 6039.8 | 6223.3 | 6416. |
| 26 | 5388.0 | 5541.2 | 5700.9 | 1- 57.9 | 6042.7 | 6226.5 | 6420. |
| 27 | 5389.5 | | 5703.6 | | 6045.7 | 6229.6 | |
| 28 | 5393.0 | | | 5873.5 | 6048.7 | 6232-7 | 6426. |
| 29 | 5395.5 | 5549.0 | 5709.1 | 5876.4 | 6051.7 | 6235.9 | 6429 |
| | | | Equation | n subtrac | live. | | |
| 1 | 23.7 | 23.8 | COMMON AND DE | | | 1 24.5 | 1 24. |

| _ | | | | | - | | |
|----|--------|--------|----------|------------|--------|--------|--------|
| D. | 66 | 67 | 68 | 69 | 70 | 71 | 72 |
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| | | | | | | | |
| 30 | 5395.0 | 5551.6 | 5711.8 | 5879.3 | 6054.7 | 6239.0 | 6433.2 |
| 31 | 5400.5 | 5554.2 | 5714.5 | 5882.1 | 6057.7 | 6242.2 | 6436.6 |
| 32 | 5403.0 | 5556.8 | 5717.3 | 5885.0 | 6060.7 | 6245.3 | 6439.9 |
| 33 | 5405.6 | 5559.5 | 5720.0 | 5887.8 | 6063.7 | 6248.5 | 6443.2 |
| 34 | 5408.1 | 5562.1 | 5722.7 | 5890.7 | 6066.7 | 6251.7 | 6446.6 |
| 35 | 5410.6 | 5564.7 | 5725.5 | 5893.6 | 6069.7 | 6254.8 | 6449.9 |
| 36 | 5413.1 | 5567.3 | 5728.2 | 5896.4 | 6072.7 | 6258.0 | 6453,3 |
| 37 | 5415.6 | 5569.9 | 5731.0 | 5899.3 | 6075.7 | 6261.2 | 6450,6 |
| 38 | 5418.1 | 5572.0 | 5733.7 | 5902.2 | 6078.8 | 6254.4 | 6460.0 |
| 39 | 5420.7 | 5575.2 | 5736.4 | 5905.1 | 6081.8 | 6267.5 | 6463.3 |
| 40 | 5423.2 | 5577.8 | 5739.2 | 5907.9 | 6084.8 | 6270.7 | 6466.7 |
| 41 | 5425.7 | 5580.5 | 5741.9 | 5910.8 | 6087.8 | 6273.9 | 6470.0 |
| 42 | 5428.2 | 5583.1 | 5744.7 | 5913.7 | 6090.8 | 6277.1 | 6473.4 |
| 43 | 5430.8 | 5585.7 | 5747.5 | 5916.6 | 6093.9 | 6280.3 | 6476.8 |
| 44 | 5433.3 | 5588.4 | 5750.2 | 5919.5 | 6096.9 | 6283.5 | 6480.1 |
| 45 | 5435.8 | 5591.0 | 5753.0 | 5922.4 | 6099.9 | 6286.6 | 6483.5 |
| 46 | 5438.4 | 5593.7 | 5755.7 | 5925.2 | 6103.0 | 6289.8 | |
| 47 | 5440.9 | 5596.3 | 5758.5 | 5928.1 | 6106.0 | 6293.0 | |
| 48 | 5443.5 | 5599.0 | 5761.3 | 5931.0 | 6109.1 | 6296.2 | |
| 49 | 5446.0 | 5001.6 | 5764.0 | 5933.9 | 6112.1 | 6299.4 | 497.0 |
| 50 | 5449.5 | 5604.3 | 5766.8 | 5936.8 | 6115.1 | 6302.7 | 6500.4 |
| 51 | 5451.1 | 5606.9 | 5769.6 | | 6118.2 | 6305.9 | |
| 52 | 5453.6 | 5609.6 | 5772.3 | 5942.6 | 6121.2 | 6309.1 | |
| 53 | 5456.2 | 5612.2 | 5775.1 | 5945.5 | 6124.3 | 6312.3 | |
| 54 | 5458.7 | 5614.9 | 5777.9 | 5948.5 | 6127.4 | 6315.5 | |
| 55 | 5461.3 | 5617.5 | 5780.7 | 5951.4 | - | | 6517.4 |
| 56 | 5463.8 | 5620.2 | 5783.5 | | 6133.5 | | |
| 57 | 5466.4 | 5622.9 | 578612 | 5957.2 | 6136.5 | 6325.2 | |
| 58 | 5468.9 | 5625.5 | 5789.0 | | 6139.6 | 6328.4 | |
| 59 | | 5628.2 | 5791.8 | | 6142.7 | 6331.7 | 6531.0 |
| 1 | 777 | 1,000 | 3/3 | 3,3,3,0 | 1 | 334.7 | 733 |
| | | | Equation | n subtract | live. | **** | |
| - | 23.8 | 24.0 | 24.1 | 24.3 | 24.4 | 24.6 | 24.7 |
| - | - | - | | | | - | |

4.6

Hh 2

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| D. | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
|-----|--------|--------|----------|---------|--------|--------|--------|
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Mile |
| -0 | 6534.5 | 6745.7 | 6970.3 | 7210.1 | 7467.2 | 7744.6 | 8045 |
| 1 | 6537.9 | 6749.4 | 6974.2 | 7214.2 | 7471.7 | | |
| 2 | 6541.3 | 6753.0 | | 7218.3 | | 7754.2 | |
| 3 | 6544.7 | | 6980.9 | | | | |
| 4 | 6548.2 | 6760.3 | 6985.8 | 7226.6 | 7485.0 | 7763.9 | 8006 |
| 5 | 6551.6 | 6763.9 | 6989.9 | 7230.8 | 7489.5 | 7768.7 | 8072 |
| 5 | 6555.0 | 6767.6 | 6993.6 | 7234.9 | | | |
| 7 8 | 6558.5 | 6771.2 | 6997.5 | 7239.1 | 7498.5 | 7778.4 | 8082 |
| 8 | 6561.9 | | 7001.4 | 7243.3 | 7502.9 | 7783.2 | |
| 9 | 6565.4 | 6778.5 | 7005.3 | 7247.5 | 7507.4 | 7788.1 | 8093. |
| 10 | 6568.8 | 6782.2 | 7009.2 | 7251.6 | 7511.9 | 7793.0 | 8098 |
| 11 | 6572.3 | 6785.8 | 7013.1 | 7255.8 | 7516.4 | 7797.8 | 8103. |
| 12 | 6575.7 | 6789.5 | 7017.0 | 7260.0 | | 7802.7 | 8109. |
| 13 | 6579.2 | 6793.2 | 7020.9 | 7264.2 | 7525.4 | 7807.6 | 8114. |
| 14 | 6582.6 | 6796.9 | 7024.8 | 7268.4 | 7530.0 | 7812.5 | 8119. |
| 15 | 6586.1 | 6800.5 | 7028.7 | 7272.6 | 7534.5 | 7817-4 | 8125. |
| 16 | 6589.5 | 6804.2 | 7032.7 | 7276.8 | 7539.0 | 7822.3 | 8130. |
| 7 | 6593.0 | | 7036.6 | 7281.0 | 7543.6 | 7827.2 | 8135. |
| 18 | 6596.5 | 6811.6 | 7040.5 | 7285.2 | 7548.1 | 7832.2 | 8141. |
| 19 | 6600.0 | 6815.8 | 7044.5 | 7289.4 | 7552.7 | 7837.1 | 8146. |
| 10 | 6603.4 | 6819.0 | 7048.7 | 7293.7 | 7557-2 | 7842.0 | 8152. |
| 11 | 6606.9 | 6822.7 | 7052.7 | 7297.9 | 7561.8 | 7847.0 | 8157. |
| | 6610.4 | 6826.4 | 7056.6 | 7302.1 | 7566.3 | 7851.9 | 8162.0 |
| | 6613.9 | 6830.1 | 7060.5 | 7306.4 | 7570.9 | 7856.9 | 8168. |
| 4 | 6617.4 | 6833.8 | 7064.5 | 7310.6 | 7575.5 | 7861.9 | 8173.7 |
| 5 | 6620.9 | 6837.6 | 7068.2 | 7314.9 | 7580.1 | 7866 8 | 8179.2 |
| 6 | 5624.4 | 6841.3 | 7072.2 | 7319.1 | 7584.7 | 7871.8 | 8184.6 |
| | | 6845.0 | 7076.2 | 7323.4 | 7589.3 | 7876.8 | 8190.1 |
| | | 6848.7 | 7080.1 | 7327.7 | 7593.9 | 7881.8 | 8195.5 |
| 9 | 5535.0 | 6852.5 | 7084.1 | 7332.0 | 7598.3 | 7886.8 | 8201.0 |
| | | | Equation | subtra& | ive. | | 1 |
| - | 24.7 | 24.8 | 24.91 | 25.2 | 25.2 | 25.3 [| 25.4 |

| D. | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
|----|--------|--------|----------|----------|--------|--------|--------|
| M | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. |
| | | | | | | | |
| 30 | 6638.5 | 6856.2 | 7088.1 | 7336.2 | 7603.1 | 7891.8 | 8206. |
| 31 | 6642.0 | 6860.0 | 7092.1 | 7340.5 | 7607.7 | 7896.8 | 8212. |
| 32 | 6645.5 | 6863.7 | 7096.1 | 7344.8 | 7512.3 | 7901.9 | 8217. |
| 33 | 6649.1 | 6867.5 | 7100.1 | 7349.1 | 7617.0 | 7906.9 | 8223. |
| 34 | 6652.6 | 6871.2 | 7104.1 | 7353.4 | 7621.6 | 7911.9 | 8228. |
| 35 | 6656.1 | 6875.0 | 7108.2 | 7357-7 | 7626.3 | 7917.0 | 8234. |
| 36 | 6659.7 | 6878.7 | 7112.2 | 7362.0 | 7630.9 | 7922.1 | 8239. |
| 37 | 6663.2 | 6882.5 | 7116.2 | 7366.4 | 7635.6 | 7927.1 | 8245. |
| 38 | 6666.8 | 6886.3 | 7120.2 | 7370.7 | 7640.2 | 7932.2 | 8250. |
| 39 | 6570.3 | 6890.1 | 7124.3 | 7375.0 | 7644.9 | 7937.3 | 8256. |
| 40 | 6673.9 | 6893.8 | 7128.3 | 7379-4 | 7649.6 | 7942.4 | 8261. |
| 11 | 6677.0 | 6897.6 | 7132.3 | 7383.7 | 7654.3 | 7947-5 | 8267. |
| 12 | 6681.0 | 6901.4 | 7136.4 | 7388.0 | 7659.0 | 7952.6 | 8273. |
| 13 | 6684.6 | 6905.2 | 7140.4 | 7392.4 | 7663.7 | 7957-7 | 8278. |
| 14 | 6688.1 | 6909.0 | 7144.5 | 7396.8 | 7668.4 | 7962.8 | 8284. |
| 15 | 6691.7 | 6912.8 | 7148.6 | 7401.1 | 7673.1 | 7968.0 | 8289. |
| 46 | 6695.3 | 6916.6 | 7152.6 | 7405.5 | 7677.8 | 7973.1 | 8295. |
| 47 | 6698.9 | 6920.4 | 7156.7 | 7409.9 | 7682.6 | 7978.2 | 8301. |
| 18 | 6702.4 | 6924.3 | 7160 8 | 7414.2 | 7687.3 | 7983.4 | 8306. |
| 19 | 6706.0 | 6928.1 | 7164.9 | 7418.6 | 7692.0 | 7988.5 | 8312. |
| 50 | 6709.6 | 6931.6 | 7169.0 | 7423.0 | 7696.8 | 7993.7 | 8318. |
| 51 | 6713.2 | 6935.7 | 7173.0 | 7427.4 | 7701.5 | 7998 9 | 8323. |
| 52 | 6716.8 | 6939.9 | 7177-1 | 7431.8 | 7706.3 | 8004.0 | 8329. |
| 53 | 6720.4 | 6943.4 | 7181.2 | 7436.2 | 7711.0 | 8009.2 | 8335. |
| 54 | 6724.0 | 6947.2 | 7185.3 | 7440.6 | 7715.8 | 8014.4 | 8340. |
| 55 | 6727.6 | 5951.1 | 7189.5 | 7445.0 | 7720.6 | 8019.6 | 8346. |
| 6 | 6731.2 | 6954.9 | 7193.6 | 7449.5 | 7725.4 | 8024.8 | 8352. |
| 7 | 6734.9 | 6958.8 | 7197 7 | 7453.9 | 7730.2 | 8030.0 | 8358. |
| 8 | 6738.5 | 6962.6 | 7201.8 | 7458.3 | 7735.0 | 8035.3 | 8363. |
| 9 | 6742.1 | 6906.5 | 7205.9 | 7462.8 | 7739.8 | 8040.5 | 8369. |
| | | | Equation | Subtract | ive. | | |
| _ | 24.7 | 24.9 | 25.0 | 25.1 | | 25.3 | 25 |

| D. | 80 | 18 | 82 | 83 | 84 |
|-----|--------|--------|----------------|--------|---------|
| м. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0 | 8375.3 | 8739.1 | 9145.6 | 9605.9 | 10137.0 |
| 1 | 8381.0 | 8745.5 | 9152.7 | 9614.1 | 10146.6 |
| 2 | 8386.8 | 8751.9 | 9159.9 | 9622.4 | 10156.2 |
| 3 | 8392.6 | 8758.3 | 9167.2 | 9630.6 | 10165.8 |
| 4 | 8398.3 | 8764.8 | 9174.4 | 9638.9 | 10175.4 |
| 5 | 8404.1 | 8771.2 | 9181.5 | 9647.2 | 10185.1 |
| | 8409.9 | 8777.7 | 9188.9 | 9655.2 | 10194.8 |
| 7 8 | 8415.8 | 8784.1 | 9196.2 | 9663.8 | 10204.6 |
| | 8421.6 | 8790.6 | 9203.5 | 9672.2 | 10214.4 |
| 9 | 8427.4 | 8797.1 | 9210.8 | 9680.6 | 10224.2 |
| 10 | 8433.3 | 8803.6 | 9218.1 | 9689.0 | 10234.0 |
| 11 | 8439.1 | 8810.1 | 9225.4 | 9697.4 | 10243.8 |
| 12 | 8445.0 | 8816.6 | 9232.8 | 9705.8 | 10253-7 |
| 13 | 8450.9 | 8823.2 | 9240.2 | 9714.2 | 10263.6 |
| 14 | 8456.8 | 8829.7 | 9247.6 | 9722.7 | 10273.5 |
| 15 | 8462.6 | 8866.3 | 9255.0 | 9731.2 | 10283.5 |
| 16 | 8468.6 | 8842.8 | 9262.4 | 9739.7 | 10293.5 |
| 17 | 8474.5 | 8849.4 | 9269.9 | 9748.3 | 10303.5 |
| 18 | 8480.4 | 8856.0 | 9277.3 | 9756.8 | 10313.6 |
| 19 | 8486.3 | 8862.6 | 9284.8 | 9765.4 | 10323.7 |
| 20 | 8492.3 | 8869.3 | 9292.3 | 9774.0 | 10333.8 |
| 21 | 8498.2 | 8875.9 | 9299.8 | 9782.7 | 10344.0 |
| 22 | 8504.2 | 8882.6 | 9307.3 | 9791.3 | 10354.1 |
| 23 | 8510.2 | 8889.2 | 9314.8 | 9800.0 | 10364.3 |
| 24 | 8516.2 | 8895.9 | 9322.4 | 9808.6 | 10374-5 |
| 25 | 8522.2 | 8902.6 | 9330.0 | 9817.3 | 10384.8 |
| 26 | 8528.2 | 8909.3 | 9337.5 | 9826,1 | 10395.1 |
| 27 | 8534.2 | 8916.0 | 9345.2 | 9834.8 | 10405.4 |
| 28 | 8540.2 | 8922.7 | 9352.8 | 9843.6 | 10415.8 |
| 29 | 8546.2 | 8929.5 | 9360.4 | 9852.4 | 10426.2 |
| | | Equati | on Subtraction | ve. | |
| | 25.5 | 25.5 | 25.7 | 25.8 | 25 |

| D. | 80 | 81 | 82 | 83 | 84 |
|----------|--------|---------|-----------------|---------|---------|
| M. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 30. | 8552.3 | 8936.2 | 9368.1 | 9861.3 | 10436.6 |
| 31 | 8558.4 | 8943.0 | 9375.8 | 9870.1 | 10447.1 |
| 32 | 8564.4 | 8949.8 | 9383.5 | 9879.0 | 10457.5 |
| 33 | 8570.5 | 8956.6 | 9391.2 | 9887.8 | 10468.0 |
| 34_ | 8576.6 | 8963.4 | 9398.9 | 9896.7 | 10478.5 |
| | 8582.7 | 8970.2 | 9406.6 | 9905.7 | 10489.1 |
| 35
36 | 8588.9 | 8977.1 | 9414.4 | 9914.6 | 10499.7 |
| 37 | 8595.0 | 8983.9 | 9422.1 | 9923.5 | 10510.4 |
| 38 | 8601.1 | 8990.8 | 9429.9 | 9932.7 | 10521.1 |
| 39 | 8607.3 | 8997.7 | 9437.8 | 9941.7 | 10531.8 |
| 40 | 8613.5 | 9004.6 | 9445.6 | 9950.8 | 10542.6 |
| 41 | 8619.6 | 9011.5 | 9453.4 | 9959.8 | 10553.3 |
| 42 | 8625.8 | 9018.4 | 9461.3 | 9968.9 | 10564.1 |
| 43 | 8632.0 | 9025.4 | 9469.1 | 9978.0 | 10574.9 |
| 14 | 8638 z | 9032.3 | 9477.0 | 9987.2 | 10585.8 |
| 45 | 8644.5 | 9039.3 | 9484.9 | 9996.3 | 10596.7 |
| 46 | 8650.7 | 9046.3 | 9492.9 | 10005.5 | 10607.7 |
| 47 | 8656.9 | 905,3.3 | 9500.8 | 10014.8 | 10618.7 |
| 48 | 8663.2 | 9060.3 | 9508.8 | 10024.0 | 10629.7 |
| 49. | 8669.5 | 9067.3 | 9516.8 | 10033.3 | 10640.8 |
| 50 | 8675.7 | 9074.4 | 9524.8 | 10042.6 | 10651.9 |
| ;1 | 8682.0 | 9081.4 | 9532.9 | 10051.9 | 10663.0 |
| 2 | 8688.3 | 9088.5 | 9540.9 | 10061.3 | 10674.1 |
| 3 | 8694.1 | 9095.6 | 9548.9 | 10070.6 | 10685.3 |
| 4 | 8701.0 | 9102.7 | 9557.0 | 10080.0 | 10696.5 |
| 5 | 8707.3 | 9109.8 | 9565.1 | 10089.4 | 10707.7 |
| 6 | 8713.6 | 9116.9 | 9573.2 | 10098.9 | 10719.1 |
| 7. | 8720.0 | 9124.0 | 9581.4 | 10108.4 | 10730.4 |
| 8 | 8726.4 | 9131.2 | 9589.5 | 10117.9 | 10741.8 |
| 9 | 8732.7 | 9138.4 | 9597.7 | 10127.4 | 10753.3 |
| | | Equati | ion Subtraction | ve. | |
| N.C. | 25.5 | 25.5 | 25.7 | 25.8 | 25. |

 $^{\odot}$

| D. | 85 | 86 | 87 | 88 | 89 |
|-----|---------|----------|-------------|---------|---------|
| M. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 0 | 10764.7 | 11532.6 | 12522.3 | 13916.6 | 16299.8 |
| 1 | 10776.2 | 11547.0 | 12541.4 | 13945.4 | 16357.5 |
| 2 | 10787.7 | 11561.4 | 12560.7 | 13924.4 | 16416.3 |
| 3 | 10799.3 | 11575.9 | 12580.0 | 14003.7 | 16476.1 |
| _4_ | 10810.0 | 11590.5 | 12599.5 | 14033.2 | 16535.0 |
| 5 | 10822.5 | 11605.0 | 12619-1 | 14063.0 | 16594.9 |
| | 10834.2 | 11619.8 | 12638.9 | 14093.0 | 16862.0 |
| 7 8 | 10845.9 | 11634.5 | 12658.6 | 14123.3 | 16726.2 |
| | 10857.7 | 11649.3 | 12678.6 | 14153.9 | 16791.7 |
| 9 | 10869.6 | | 12698.6 | 14184.7 | 16858.5 |
| 10 | 10881.4 | 11679.1 | 12718.8 | 14215.8 | 16926.5 |
| 11 | 10893.3 | 11694.0 | 12739.1 | 14247.2 | 16990.6 |
| 12 | 10905.2 | 11709.1 | 12759.5 | 14278.9 | 17066.9 |
| 13 | 10917.2 | 11724.2 | 12780.0 | 14310.9 | 17130.3 |
| 14 | 10929.1 | 11739 4 | 12800.7 | 1+343.2 | 17213.2 |
| 15 | 10941.2 | 117547 | 12821.5 | 14375.8 | 17288.7 |
| 16 | 10953.3 | 117700 | 12842.5 | 14408.7 | 17366.0 |
| 17 | 10965.5 | 11785.4 | 12863.5 | 14441.9 | 17445.0 |
| 18 | 10977-7 | 11800.9 | 12884.7 | 14475.4 | 17525.9 |
| 19 | 10989 9 | | 12906.0 | 14509.3 | |
| 20 | 11002.2 | 11832.0 | 12927-4 | 14543.5 | 17693.6 |
| 21 | 11014.5 | 11847.6 | 12948.9 | 14578.1 | 17780.7 |
| 22 | 11026.9 | 11863.4 | 12970.6 | 14613.0 | 17869.9 |
| 23 | 11039.3 | 11879.2 | 12992.5 | 14683.9 | 18055.8 |
| 24 | 11051.7 | 11895.1 | 13014.4 | | |
| 25 | 11064.2 | 11911.0 | 13036.6 | 14719.9 | 18152.6 |
| 26 | 11076.8 | 11927.1 | 13058.8 | 14756.3 | 18252.3 |
| 27 | 11102.0 | 11943.1 | 13081.2 | 14793.0 | 18460.7 |
| 29 | 11114.6 | 11959.4 | 13126.5 | 14867.8 | 18569.8 |
| - | | 1.9/5.0 | .,, | -47-0 | |
| | | Equation | subtractive | | |
| | 25.8 | 25.9 | 26.0 | 26.0 | 26.0 |

| D. | 85 | 86 | 87 | 88 | 89 |
|----------|---------|---------------|---------------|------------|----------|
| _ | | 311 | 7411 | 700 | |
| M. | Miles. | Miles. | Miles. | Miles. | Miles. |
| 30 | 11127-4 | 11992.0 | 13149.3 | 14905.8 | 18682.5 |
| 31 | 11140.1 | 12008.4 | 13172.3 | 14944.2 | 18799.1 |
| 32 | 111529 | 12024.9 | 13195.5 | 14983.0 | 18919.7 |
| 33 | 11165.8 | 12041.5 | 13218.8 | 15022.3 | 19044.7 |
| 34 | 11178.7 | 12058.2 | 13242.3 | 15062.1 | 19174.4 |
| 35 | 11191.7 | 12074.9 | 13265.9 | 15102.3 | 19309.2 |
| 35
36 | 11204.7 | 12091.7 | 13289.7 | 15143.0 | 19449.5 |
| 37 | 11217.7 | 12108:6 | 13313.7 | 15184.2 | 19595.8 |
| 38 | 11230.9 | 12125.6 | 13337.8 | 15225.8 | 19748.6 |
| 39 | 11244.0 | 12142.7 | 13362.1 | 15268.0 | 19908.5 |
| 40 | 11257/2 | 12159.9 | 13386.6 | 15310.7 | 20076.4 |
| 41 | 11270.5 | 12177.1 | 13411.2 | 15354.0 | 20252.5 |
| 42 | 11283.8 | 12194.4 | 13436.1 | 15397.8 | 20483.3 |
| 43 | 11297.1 | 11211.8 | 13461.1 | 15442.1 | 20635.1 |
| 44 | 11310.6 | 12229.3 | 13486.3 | 15487.0 | 20843.5 |
| | 11324.0 | 12246.9 | 13511.6 | 15532.6 | 21065.4 |
| 45 | 11337.6 | 12264.6 | 13537.2 | 15578.7 | 21302.5 |
| 47 | 11351.1 | 12282.4 | 13563.0 | 15025.5 | 21557-3 |
| 48 | 11364.8 | 12300.2 | 13588.9 | 15673.0 | 21832.5 |
| 49 | 11378.4 | 12318.2 | 13615.1 | 15721.0 | 22131.6 |
| 50 | 11392.2 | 12336.3 | 13641.4 | 15769.8 | 22459 3 |
| 51 | 11406.0 | 12354.4 | 13668.0 | 15819.3 | 22821.5 |
| 52 | 11419.8 | 12372.7 | 13694.7 | 15869.5 | 23226.4 |
| 53 | 11433.7 | 12391.0 | 13721.7 | 15920.4 | 23685.4 |
| 54 . | 11447.7 | 12409:5 | 13748.9 | 15972.1 | 24215.3 |
| 55 | 11461.7 | 12428.0 | 13776.3 | 16024.6 | 24842.1 |
| 56 | 11475.8 | 12446.7 | 13803.9 | 16077.9 | 25609.2 |
| 57 | 11489.9 | 12465.3 | 13831.7 | 16132.0 | 26598.2 |
| 58 | 11504.1 | 12484.2 | 13859.8 | 16187.0 | 27992.1 |
| 59 | 11518.3 | 12503.1 | 13888.1 | 16242.9 | 30375.0 |
| - | | 102 15 22 150 | | N | 10000000 |
| | | Equation | n Subtractive | · Continue | |
| | 25.9 | 25.9 | 26.0 | 26.0 | 26. |

Li

TABLE XI. Of Minutes or Miles of the Equator, contained in every Degree of the Meridian; also Length of any Arc of the Meridian, from the Equator to the Pole, in the Spheroid.

| 1 | _ | | THE I OLE | _ | dia . | pperoia. | | | |
|---|--------|--------|-----------|--------|-------|----------|-------|-------|---------|
| 1 | De | Miles | Miles | Deg | Miles | Miles | 16 | Miles | Miles |
| | Deg. | in | from E- | 00 | in | from E- | 89 | in | from E |
| | of | eacn | quator | 105 | each | quator | 10 | | quator |
| ı | - | Deg. | to any | | Deg. | to any | 12 | Deg. | to any |
| 1 | Latit. | of | Degree | Latit. | to | Degree | 1 2 | of | Degree |
| 1 | - | Lat. | of Lat. | 13. | Lat. | of Lat. | atit. | Lat. | of Lat. |
| 1 | 0 | | 0000.00 | 30 | 59.72 | 1788.26 | | | 3584.88 |
| I | 1 | 59.55 | 59.55 | 31 | 59.72 | 1847.98 | 61 | | 3644.94 |
| ı | 2 | 10000 | 119.10 | 32 | 59.74 | 1907.72 | 62 | 60.07 | 3705.01 |
| 1 | 3 | 59.55 | 178.65 | 33 | 59.74 | 1967.46 | 63 | | 3765.00 |
| ١ | 4 | 59.55 | 238.21 | 34 | 59.76 | 2027.22 | 64 | 60.09 | |
| ١ | 5 | 5.9.55 | 297.76 | 35 | 59.77 | 2086.99 | 65 | | 3885.28 |
| ۱ | | 59.55 | 357-31 | 36 | 59.77 | 2146.76 | 66 | 60.11 | 3945-39 |
| ١ | 7 8 | 59.56 | 416.87 | 37 | 59.79 | 2206.55 | 67 | 60.11 | 4005.50 |
| ١ | | 59.56 | 476.44 | 38 | 59.80 | 2266.35 | 68 | | 4065.6 |
| 1 | 9 | 59.56 | 536.00 | 39 | 59.81 | 2326.16 | 69 | 60.13 | 4125.76 |
| ı | 10 | 5.9.57 | 595.57 | 40 | 59.82 | 2385.98 | 70 | | 4185.90 |
| ١ | 11 | 59-57 | 655.14 | 41 | 59 84 | 2445.82 | 71 | 60.15 | 4246.05 |
| ١ | 12 | 59.58 | 714.72 | 42 | 59.85 | 2505.67 | 72 | | |
| 1 | 13 | \$9.58 | 774-30 | 43 | 59.86 | 2565.53 | 73 | | 4366.37 |
| ı | 14 | 59.59 | 833.89 | 44 | 59.87 | 2625.40 | 74 | | 4426.54 |
| ١ | 15 | 59.59 | 893.48 | 45 | 59.88 | 2685.28 | 75 | 60.18 | 4486.72 |
| ı | 16 | 59.60 | 953.08 | 46 | 59.89 | 2745-17 | 76 | 60.18 | 4546.90 |
| ı | 17 | 59.61 | 1012.69 | 47 | 59.90 | 2805.07 | 77 | 60.19 | 4607:09 |
| ł | 18 | 59.61 | 1072.30 | 48 | 39.92 | 2864.99 | 78 | 60.19 | 4667.28 |
| ۱ | 19 | 59.61 | 1131.91 | 49 | 59.93 | 2924.92 | 79 | 60.20 | 4727.48 |
| L | 20 | 59.63 | 1191.54 | 50 | 59.94 | 2984.86 | 80 | 60.20 | 4787.68 |
| I | 21 | 59 63 | 1251.37 | 51 | 59.95 | 3044.81 | 81 | 60.21 | 4847.89 |
| ١ | 22 | 59.64 | 1310.81 | | 99.96 | 3104.77 | 82 | 60.21 | 4908.10 |
| ŀ | 23 | 59.65 | 1370.46 | | 59-97 | 3164.74 | 83 | 60.21 | 4968.31 |
| ŀ | 24 | 59.60 | 1430.12 | | 59-99 | 3224.73 | 84 | 60.22 | 5028.53 |
| Ŀ | 25 | 59.67 | 1489.79 | | 60.00 | 3284.73 | 85 | 60122 | 5088.75 |
| | 26 | 59.67 | 1549.46 | _ | 60.00 | 3344.74 | 86 | 60.22 | 5148.97 |
| 1 | 27 | | 1609.15 | | 60.02 | 3404.76 | 87 | 60.22 | 5209.19 |
| | | | 1668.84 | 58 | 60.03 | 3464.79 | 88 | 60.22 | 5269.41 |
| 2 | | | 1728.54 | | 60.04 | 3524 83 | 89 | 60.22 | 5329.63 |
| 3 | | 59.72 | 788.26 | 60 6 | 50 05 | 3584.88 | | 60.22 | 5189.85 |
| - | - | | - | | , | 11-1 | ,- 1 | | 1- |

| TABLE | XII. | Of Amplitudes. |
|-------|------|----------------|
|-------|------|----------------|

or,

| | - | | C. | | 1 | | Deg | gree | s o: | f L | atit | ude | | | | | | |
|---------------------|----------------|-----|----------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Deg. | 1 | | 1 | 0 | 2 | 0 | 2 | 5 | 3 | 0 | 3 | 2 | 3 | 4 | 3 | 6 | 3 | 8 |
| of
Declin. | | , | | , | • | , | 0 | , | 0 | , | • | 1 | • | , | 0. | , | 0 | , |
| 1 2 3 | 1 2 3 | 000 | 1 2 3 | 1 2 3 | 1 2 3 | 4
8
12 | 1
2
3 | 6
12
18 | 1 2 3 | 9
18
28 | 1 2 3 | 33 | 1 2 3 | 12
25
37 | 1 2 3 | 14
28
43 | 1 2 3 | 16
32
48 |
| 4 5 6 | 4 5 6 | 000 | 4 56 | 4 5 6 | 4 56 | 15 | 4 56 | 25
31
37 | 4 56 | 37
46
56 | 4 5 7 | 43
54
4 | 467 | 50
2
15 | 467 | 57
11
25 | 567 | 37 |
| 7 8 9 | 7 8 9 | 000 | 789 | 7 8 9 | 789 | 27
31
35 | 789 | 43
50
56 | 8 9 10 | 5
15
24 | 9 | 16
27
37 | 9 | 27
39
52 | | 39
54
9 | | 54 |
| 10
11
12 | 10
11
12 | 0 | 10 | | 10 | | 11 12 13 | | 11 12 13 | 33
43
53 | 13 | 48 | 12 | 18 | 13 | 23
38
53 | 12 | 43 |
| 13
14
15 | 13 | 0 | 13 | 14 | 13
14
16 | 55 | 15 | 23
29
35 | 16 | 3
13
23 | 15 | 23
34
46 | 15 | 57 | 16 | 24 | 16 | 53 |
| 16
17
18 | 16
17
18 | 0 | 16 | 17 | 17
18
19 | 7 | 18 | 42
49
50 | 19 | 43 | 20 | 10 | 19 20 21 | 39 | 19 | 55
11
27 | 21 | 46 |
| 19
20
21 | 19 20 21 | 0 | 20 | 20 | 21 | | 22 | 3
10
18 | 22
23
24 | 16 | 22
23
25 | 47 | 23
24
25 | 21 | | | 24
25
27 | |
| 22
23
23° 28' | 22 23 23 | 0 | 22
23
23 | | | 34 | 24
25
26 | | 25
26
27 | 49 | 26
27
28 | 26 | 26
28
28 | 7 | 27
28
29 | 53 | 28
29
30 | 43 |

| | - | | | | | | D | egr | ees | of : | Lat | itud | le. | 1 | | | | |
|-------------------|----------------|----------------|----------------|----------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|----------------|----------------|----------------|----------|------|
| Deg. | 4 | ည | 1 | i | 4 | 2 | 4 | -3 | 14 | 4 | 4 | 5 | 4 | 6 | 4 | 7 | 4 | 8 |
| of
Declin | . 0 | , | 0 | , | 0 | .1 | 0 | 1 | 0 | i | 0 | | 0 | , | 0 | , | 0 | |
| I
2
3 | 1 2 3 | 18
36
55 | 2 | 19
39
58 | 2 | 21
41
2 | 1 2 4 | 44 | 2 | 23
47
10 | 2 | 25
50
15 | | 26
53
19 | 2 | 28
56
24 | 2 | 50 |
| 4 5 6 | 567 | 13
32
50 | 6 | 18
38
57 | | 23
44
5 | 568 | 28
51
13 | 5 6 8 | 34
58
21 | 5 7 8 | 40 5 30 | 7 | 46
12
39 | .5 7 8 | 52
20
49 | | 59 |
| 7 8 9 | 910 | 9
28
47 | 9 10 | 17
37
57 | 91012 | 26
47
9 | 9 10 12 | 35
58
21 | 911 | 45
9
34 | 11 | | 10 | | 10 | 18
47
16 | | - |
| 10
11
12 | 13 | 5
25
45 | 13 | 39 | 13 | 31
53
15 | 13
15
16 | 44 7 31 | 15 | 58
22
48 | 15 | 38 | 14 | 56 | 14 16 17 | 44
15
45 | | 34 |
| 13
14
15 | 17 | 5
24
44 | 17
18
20 | | 19 | | 17 | 55
19
43 | 18
19
21 | 13
39
5 | 18
20
21 | 33
0
28 | | 54
23
52 | 20 | 47 | 19 21 22 | 39 |
| 16
17
18 | 21 22 23 | | 21
22
24 | 25
47
10 | 23 | 46
10
34 | 23 | 34 | | 32
59
26 | | 56
25
54 | | 23
53
25 | 23
25
26 | 50
23
57 | 25 | 55 |
| 19
20
21 | 25
26
27 | 9
3
53 | 25
26
28 | 33
56
21 | 27 | 58
24
50 | | 25
53
20 | 26
28
29 | 54
23
53 | 28 | 25
56
27 | 29 | | 30 | 32
7
42 | 30 | 45 |
| 22
23
3°28' | 29
30 | 16,40 | 31 | 45
11
51 | 31 | 16
43
24 | 32 | 48
16
59 | 32 | 32
51
37 | 33 | 58
30
16 | 34 | 37
12 | 34 | 18
56
44 | 35 | 4:31 |

| | | | | | | , | De | gre | es c | f L | atit | ude | 2. | | | | | |
|--------------------|-------------|----------------|----|----------------|----|----------------|----|----------------|------|----------------|------|---------------------|----|----------------|----|----------------|-----|-------|
| Deg. | 4 | 9 | 5 | 0 | 5 | 1 | 5 | 2 | 5 | 3 | 5 | 4 | 5 | 5 | 5 | 6 | 5 | 7 |
| of
Declin. | 0 | | 0 | | 0 | 1 | 0 | , | 0 | 1 | 0 | , | 0 | 21 | 0 | , | • | |
| 1 2 3 | 1
3
4 | 31 34 | 3 | 33
6
40 | 3 | 10 | 3 | 37
15
52 | 3 | 39
20
59 | | 4 ² 24 6 | 3 | 45
29
14 | 3 | 47
34
22 | 3 5 | 5 4 3 |
| 5 6 | 6 7 9 | 38 | 7 | | 7 | 22
58
33 | 8 | 30
8
46 | 8 | 39 | 8 | 31 | 8 | 59
44
30 | 8 | 57 | 9 | 2 |
| 7.8 | 12 | 42
14
47 | 12 | 55
29
5 | 12 | 45 | 13 | 2 | 13 | 21 | 13 | 41 | 14 | . 2 | 14 | 35
24
14 | 14 | 4 |
| 10
1-1
12 | | 54 | 17 | 40
16
52 | 17 | 39 | 18 | 3 | 18 | 29 | 18 | 57 | 19 | 26 | 19 | 56 | 20 | 2 |
| 13
14
15 | 20 21 23 | 38 | 22 | 29
6
45 | 22 | 37 | 23 | 8 | 23 | 42 | 24 | 18 | 24 | 56 | 25 | 37 | 26 | 2 |
| 16
17
18 | | 51
28
6 | 27 | 24
3
43 | 27 | 41 | 28 | 21 | 29 | 4 | 29 | 59 | 30 | 39 | 31 | 32
31
33 | 32 | 2 |
| | 31 | 25 | 32 | 25
8
52 | 32 | 54 | 33 | 44 | 34 | 39 | 35 | 35 | 36 | 36 | 37 | 36
42
51 | 58 | 3 5 |
| 22
23
3° 28' | 36 | 48 33 22 | 37 | 26 | 38 | 23 | 39 | 24 | 40 | 29 | 41 | 40 | 42 | 56 | 44 | 19 27 | 45 | 5 |

| , | | | | - | | | De | gree | es o | f L | atit | ude | | | | | | |
|-------------------------|----------------|----------------|----------------|----------------|---------------|------|---------------|--------------|------|----------------|------|----------------|-------|----------------|-----|------|----------------|-----|
| Deg. | 5 | 8 | -5 | 9 | 6 | 0 | 6 | 1 | 6 | 2 | 6 | 3 | 6 | 4 | 6 | 5 | 6 | 6 |
| of
Declin. | 0 | , | | , | 0 | , | 0 | , | 0 | , | • | , | 0 | , | 0 | , | 0 | - |
| 2 3 | 3 5 | 53
46
40 | 3 5 | 56
53
50 | 2 46 | 0000 | 2 4 6 | 3
8
12 | 4 | 7
15
24 | 4 6 | 12
24
37 | 2 4 6 | 17
33
51 | 4 7 | 44 6 | | 5 2 |
| 5 6 | 7 9 | 34
26
22 | | 47
43
42 | 8
10
12 | | 8
10
12 | | 10 | 32
41
52 | 11 | 50 | 11 | 9
28
47 | 911 | 54 | 12 | 2 |
| 7 8 8 | 13 | 14 | 15 | | 16 | 10 | 16 | 40 | 17 | 14
28 | 17 | | 18 | 30 | 16 | 13 | 20 | |
| 65 10
6= 14
5= 12 | 19
21
23 | 4 | 21 | 43 | 22 | 26 | 23 | 10 | 23 | 40
58
17 | 24 | 51 | 25 | 48 | 26 | 50 | 27 | 5 |
| 13
14
15 | 27 | 9 | 28 | 1 | 28 | 55 | 29 | 50 | 31 | 37
1
27 | 32 | 12 | 33 | 30 | 34 | 55 | 33
36
39 | 2 |
| 16
17
18 | 33 | 28 | 34 | 32
53 | 35 | 47 | 37 | 5 | 38 | 57 | 40 | 5 | 41 | 49 | 43 | 46 | 45 | 5 |
| 19
20
21 | 37
40
42 | 54
12
34 | 41 | 37 | 43 | 10 | 44 | 52 | 46 | 54
46
46 | 48 | 53 | 51 | 57
17
50 | 54 | . 2 | 57 | ı |
| 22
23
23° 28′ | 44
47
48 | 30 | 46
49
50 | 21 | 51 | 24 | 53 | 42 | 56 | 56 | 59 | 24 | 63 | 2 | 67 | | 73 | 5 |

TABLE XIII. Of the Change of Azimuth, which the Sun makes, in rifing from the Horizon one Degree of Altitude.

| | I | | | - | | 1 | | | |
|--------------|----------------------|------|-------|--------|------|----------------|-----------|------|--------------|
| La | | 7 | | Degree | | | | | |
| Latitude 0 | 0 | 20 | 40 | 50 | 60 | 65 | 70 | 75 | 80 |
| de | 0 / | 0 1 | 0 1 | 0 1 | 0 / | 0 1 | 0 1 | 0 1 | 0 .1. |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 5 | 6 | 7 | 8 | 10 | 12 | 15 | 20 | 30 |
| 10 | 11 | 11 | 14 | 16 | 21 | 38 | 31 | 41 | 1 1 |
| 15 | 16 | 17 | 21 28 | 25 | 32 | 38 | 47 | 1 2 | 1. 33 |
| 20 | 22 | 23 | | _34 | 45 | 5 ² | 1 4 | 1 24 | 2 6 |
| 25 | 28 | 30 | 36 | 43 | 57 | | 1 22 | 1 48 | 2 41 |
| 30 | 35 | 37 | 45 | 54 | 1 10 | I 22 | 1 41 | 2 14 | 3 20 |
| 35 | 4 ²
50 | 45 | 1 55 | 1 18 | 1 40 | 1 39 | 2 3 2 27 | 3 14 | 4 2 |
| 40 | 52 | 55 | 1 8 | 1 21 | 1 44 | 2 3 | 2 32 | 3 21 | 4.50 |
| 42 | 54 | 57 | 1 10 | 1 24 | 1 48 | 2 7 | 2 37 | 3 28 | 5 11 |
| 43 | 56 | 1 0 | 1 13 | 1 27 | 1 52 | 2 12 | 2 43 | 3 36 | 5 22 |
| 44 | 58 | 1 2 | 1 15 | 1 30 | 1 56 | 2 17 | 2 49 | 3 44 | 5 33 |
| 45 | 1 0 | 1 4 | 1 18 | 1 33 | 2 0 | 2 22 | 2 55 | 3 52 | 5 45 |
| 45 | 1 2 | 1 6 | 1 21 | 1 36 | 2 4 | 2 27 | 3 1 | 4 0 | 5 57 |
| 47 | 1 4 | 1 9 | 1 24 | 1 39 | 2 9 | 2 32 | 3 8 | 4 9 | 6 10 |
| 47 | 1 7 | | 1 27 | 1 43 | 2 14 | 2 37 | 3 15 | | 6 23 |
| 49 | 1 9 | 1 13 | 1 30 | 1 47 | 2 19 | 2 43 | 3 22 | 4 27 | 6 37 |
| 50 | 1 12 | 1 16 | 1 33 | 1 51 | 2 24 | 2 49 | 3 29 | 4 36 | 6 52 |
| 51 | 1 14 | 1 19 | 1 36 | 1 55 | 2 29 | 2 55 | 3 37 | 4 46 | 7 7 |
| 52 | 1 17 | 1 22 | 1 40 | 2 0 | 2 35 | 3 2 | 3 45 | 4 57 | 7 23 |
| 53 | 1 20 | 1 25 | 1 44 | 2 4 | 2 40 | 3 9 3 16 | 3 54 | 5 8 | 7 40 |
| 54 | 1 23 | 1 28 | 1 52 | 2 8 | 2 45 | 3 16 | 4 3 4 11 | 5 32 | 7 57
8 15 |
| 55
56 | 1 29 | 1 35 | 1 56 | 2 18 | 2 58 | 3 31 | 4 21 | 5 45 | _ , |
| | | 1 39 | 2 0 | 2 24 | 3 6 | 3 39 | 4 31 | 5 58 | - |
| 57 | 1 33 | 1 43 | 2 5 | 2 30 | 3 13 | 3 48 | 4 42 | 6 12 | 8 55 |
| 59 | 1 40 | 1 47 | 2 10 | 2 36 | 3 20 | 3 57 | 4 53 | 6 26 | , 20 |
| 60 | 1 44 | 1 51 | 2 16 | 2 42 | 3 28 | 4 6 | 5 4 | 6 41 | |
| 61 | 1 48 | 1 56 | 2 21 | 2 49 | 3 36 | 4 15 | 5 16 | 6 58 | 7 |
| 62 | 1 53 | 2 1 | 2 27 | 2 56 | 3 45 | 4 27 | 5 29 | 7 16 | |
| 63 | 1 58 | 2 6 | 2 34 | 3 4 | 3 55 | 4 39 | 5 43 | 7 35 | |
| 64 | 2 3 | 2 11 | 2 41 | 3 12 | 4 6 | 4 52 | 5 59 6 16 | 7 56 | 14 3 |
| 65 | 2 9 | 2 17 | 2 48 | 3 20 | 4 18 | 5 5 | | 8 18 | 11-1-11 |
| 66 | 2 15 | 2 23 | 2 56 | 3 29 | 4 30 | 5 19 | 6 34 | 8 43 | 0 10 |

248 TABLE XIV. Of Ascensional Difference.

| Lat. | | 1.00 | No regio | - ALE TAB | | D | egr | ees | of |)e | clin | ati | on. | | | 0 | | | - |
|--|-----|------|----------|-----------|-----|----------------------------------|----------------------|----------------------|----------|----|------|-----|-----|----|----------------|----|---------------------------|-----|----------------------|
| 7 | 1 | 2 | 3 | 14 | 15 | 6 | 7 | 8 | 9 | 1 | 0 | 1 | 11 | 11 | 12 | 1 | i 3. | 1 | 14 |
| 0 | 1 | 1 | 1 | 1 | 1 2 | 1 | 1 | 1 | -, | h | 1 | h | 1 | h | 1 | h | 7 | h | ' |
| 5 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 6 | 3 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 5 | 0 | 5 |
| 10 | 1 | 1 | 2 | 3 | 4 | 4 | 5 | | | 0 | 7 | 0 | 8 | 0 | 9 | 0 | 9 | 0 | 10 |
| 12 | 1 | 2 | 3 | 3 | 4 | 5 | | 7 | 8 | 0 | 9 | 0 | 9 | 0 | 10 | 0 | 11 | 0 | 12 |
| 14 | I | 2 | 3 | 5 5 | 5 | | 7 8 | 8 | 9 | 0 | 10 | 0 | 11 | 0 | 12 | 0 | 13 | 0 | 14 |
| 16 | i | 3 | 3 | 5 | 7 | 7 8 | | 9 | 10 | 0 | 12 | 0 | 13 | 0 | 14 | 0 | 15 | 0 | 16 |
| | 1 | 3 | 4 | 6 | 7 | 9 | 910 | 12 | - | - | 13 | - | 16 | - | 18 | - | 17 | 0 | 19 |
| 20 | 2 | 3 | 4 | 6 | 8 | 10 | 11 | 13 | 13 | 0 | 15 | 0 | 18 | 0 | 20 | 0 | 19 | 0 | 21 |
| 24 | 2 | 4 | 5 5 6 | | 9 | 11 | 13 | 14 | 16 | 0 | 18 | 0 | 20 | 0 | 22 | 0 | | 0 | 26 |
| 26 | 2 | 4 | | 7 8 | 10 | 12 | 14 | 16 | 18 | 0 | 20 | 0 | 22 | 0 | 24 | 0 | 1 | | 28 |
| 28 | 2 | 4 | 6 | 9 | 1.1 | 13 | 15 | 17 | 19 | 0 | 22 | 0 | 24 | 0 | 26 | 0 | 0 | 0 | 30 |
| 30 | 2 | 5 | 7 | 9 | 12 | 14 | 16 | 19 | 2.1 | 0 | 23 | 0 | 25 | 0 | 28 | 0 | 31 | 0 | 33 |
| 32 | 2 | 5 | 7 8 | 10 | 13 | 15 | 18 | 20 | 23 | 0 | 25 | 0 | 28 | 0 | 31 | 0 | 33 | 0 | 36 |
| 34 | 3 | 5 | | 11 | 14 | 16 | 19 | 22 | 25 | 0 | 27 | 0 | 30 | 0 | 33 | 0 | 36 | 0. | 39 |
| 36 | 3 | 6 | 9 | 12 | 15 | 18 | 20 | 23 | 26 | 0 | 29 | 0 | 32 | 0 | | 0 | 00 | 0 | 42 |
| 38 | 3 | 7 | 9 | 13 | 16 | 19 | 22 | 25 | 28 | 0 | 32 | 0 | 35 | 0 | 38 | 0 | | 0 | 45 |
| 40 | 3 | 7 | 11 | 13 | 18 | 22 | 24 | 27 | 31 | 0 | 34 | 0 | 38 | 0 | 41 | 0 | | | 48 |
| 42 | _ | 7 | 11 | 15 | 19 | 22 | 26 | 29 | 33 | 0 | 37 | - | 40 | - | 44 | - | 48 | 0 | 51 |
| 43 | 4 | 8 | 12 | 15 | 19 | 23 | 27 | 30 | 34 | 0 | 38 | 0 | 42 | 0 | 46 | 0 | 50 | 0 | 54
56 |
| 44 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 0 | 39 | 0 | 45 | 0 | 49 | 0 | | 0 | 58 |
| 46 | 4 | 8 | 12 | 17 | 21 | 25 | 29 | 33 | 38 | 0 | 42 | 0 | 46 | 0 | 51 | 0 | 55 | 1 | 0 |
| 47 | 4 | 9 | 13 | 17 | 22 | 26 | 30 | 35 | 39 | 0 | 44 | 0 | 48 | 0 | 53 | 0 | 57 | 1 | 2 |
| 48 | 4 | 9 | 13 | 18 | 22 | 27 | 31 | 36 | 41 | 0 | 45 | 0 | 50 | 0 | 55 | 0 | 59 | I | 4 |
| 49 | 5 | 9 | 14 | 18 | 23 | 28 | 32 | 37 | 42 | 0 | 47 | 0 | 52 | 0 | 57 | 1 | 2 | 1 | 7 |
| 150 | 5 | 10 | 14 | 19 | 24 | 29 | 34 | 39 | 44 | 0 | 49 | 0 | 54 | 0 | 59 | 1 | 4 | 1 | 9 |
| 51 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 0 | 50 | 0 | 56 | 1 | 1 | 1 | 6 | I | 12 |
| 52 | 5 | 10 | 16 | 21 | 26 | 31 | 36 | 41 | 47 | 0 | 52 | 0 | 58 | I | 3 | 1 | 9 | 1 | 14 |
| 53 | 5 | 11 | | 21 | 27 | 3.2 | 38 | 43 | 49 | 0 | 53 | 0 | 59 | I | 5 | I | 11 | 1 | 17 |
| 54 | 6 | 11 | 17 | 22 | - | 33 | 39 | 45 | 50 | 0 | 56 | 1 | 2 | - | | - | 14 | - | 20, |
| 55 | 6 | 12 | 17 | 23 | 29 | 35 | 40 | 46 | 52 | 0 | 58 | I | 4 | 1 | 11 | 1 | 17 | 1 | 23 |
| 50 | 6 | 12 | 19 | 24 | 30 | 36 | 42 | 48 | 54 | I | 2 | ! | 7 | I | 13 | I | | I | 27 |
| 57 | 6 | 13 | | 25 | 31 | 37 | 44 | 20 | 56 | 1 | 4 | 1 | 12 | i | 10 | | 23 | | 30 |
| 100 | 1. | 13 | 19 | 27 | 32 | 39 | 45
47 | 54 | 59
61 | i | 8 | i | 16 | I | 23 | 1 | 30 | 1 | 38 |
| 60 | 7 | 14 | 21 | 27 | 35 | 42 | 49 | 56 | 64 | ī | 11 | I | 19 | 1 | 19
23
26 | I | 27
30
31 | 1 | 34
38
42 |
| 57
58
59
61
62
63
64
65
66 | 7 | 14 | 22 | 29 | 36 | 39
40
42
44
46
48 | 51 | 54
56
59 | 66 | 1 | 14 | 1 | 22 | 1 | | | 38 | ī | 47 |
| 62 | 8 | 15 | 13 | 30 | 38 | 46 | 52 | 61 | 69 | i | 17 | 1 | 26 | 1 | 30
34
39 | I | 43 | 1 | 52 |
| 63 | 8 8 | 16 | 24 | | | 48 | 56 | 64 | 72 | 1 | 21 | ř | 30 | r | 39 | I | 48 | 1 | 5 ²
57 |
| 64 | 8 | 17 | 25 | | | 50 | 53
56
58
61 | 67 | 76 | 1 | 25 | 1 | 30 | 1 | 43 | 1 | 53 | 2 | 3 |
| 65 | 9 | 18 | 25
26 | 33
34 | 41 | 52 | 61 | 64
67
70
73 | 79 | 1 | 25 | 1 | 39 | I | 43
49
54 | 1 | 43
48
53
59
5 | 2 2 | 3 9 16 |
| 66 | 9 | 118 | 27 | 36 | 45 | 54 | 64 | 173 | 183 | lı | 34 | 11 | 44 | 11 | 54 | 12 | 5 | 2 | 10 |

| F | | | | | - | un com | | egi | ree | s of | 1) | ecli | na | tion | | | - | | 1 man | - |
|----------------------------------|-----|--------------------------------|-------|---------------------------------|---|----------------|-------|---------------------------|-----|----------------------------------|-------|----------------------|---------------|----------------------------|---------|---------------------|-------|----------|---------|-------|
| Lat. | 7 | | | 6 | 7 | 7 - | | 18 | | _ | - | - | - | - | _ | 200 | | | | - |
| - | h | 5 | h | 7 | h | 7 | h | 7 | h | 19 | h | 7 | h | 1 | h | 22 | h | 3 | - | 4 |
| 0 | - | | - | 6 | - | 6 | - | _ | - | _ | - | A | - | - | - | _ | - | - | h | _ |
| 5 | 0 | 5 | 0 0 | 12 | 0 | 12 | 0 | 7 | 0 | 7. | 0 | 7 | 0 | 16 | 0 | 8. | 0 | 9 | 0 | 9 |
| 10 | 0 | 13 | 0 | 14 | 0 | 15 | 0 | 16 | 0 | 17 | 0 | 18 | 0 | 19 | 0 | 20 | 0 | 17 | 0 | 18 |
| 14 | 0 | 15 | 0 | 16 | 0 | 17 | 0 | 19 | 0 | 20 | 0 | 21 | 0 | 22 | 0 | 23 | 0 | 24 | 0 0 | 22 |
| 16 | | 18 | 0 | 19 | 0 | 20 | 0 | 21 | 0 | 23 | 0 | 24 | 0 | 25 | 0 | 27 | 0 | 28 | 0 | 25 |
| 18 | 0 | 20 | 0 | 21 | 0 | 23 | 0 | 24 | 0 | 26 | 0 | 27 | 0 | 29 | 0 | 30 | 0 | 32 | 0 | 33 |
| 20 | 0 | 22 | 0 | 24 | 0 | 26 | 0 | 27 | 0 | 29 | 0 | 30 | 0 | 32 | 0 | 34 | 0 | 30 | 0 | 37 |
| 22 | 0 | 25 | 0 | 27 | 0 | 28 | 0 | 30 | 0 | 32 | 0 | 34 | 0 | 36 | 0 | 38 | 0 | 40 | 0 | 41 |
| 24 | 0 | 27 | 0 | 29 | 0 | 31 | 0 | 33 | 0 | 35 | 0 | 37 | 0 | 39 | 0 | 41 | 0 | 44 | 0 | 46 |
| 26 | 0 | 30 | 0 | 32 | 0 | 34 | 0 | 30 | 0 | 39 | 0 | 41 | 0 | 43 | 0 | 45 | 0 | 48 | O | 50 |
| 28 | 1 | 33 | 0 | 35 | 0 | 37 | 0 | 40 | 0 | 42 | 0 | 45 | 0 | 47 | 0 | 50 | 0 | 52 | 0 | 55 |
| 30 | 0 | 36 | 9 | 38 | 0 | 40 | 0 | 43 | 0 | 46 | 0 | 49 | 0) | 51 | 0 | 54 | 0 | 57 | 1 | 0 |
| 32 | 0 | 39 | 0 | 41 | 0 | 44 | 0 | 47 | 0 | 50 | 0 | 53 | 0 | 50 | 0 | 58 | 1 | 2 | I | 5 |
| 34 | 0 | 42 | 0 | 45 | 0 | 48 | 00 | 51 | 0 | 54 | 0 | 57 | 1 | 0 | I | 3 | L | 7 | I | 10 |
| 36
38 | 0 0 | 48 | 0 | 52 | 0 | 55 | 0 | 55 | 0 | 58 | I | 6 | I | 5 | I | 8 | 1 | 12 | 1 | 16 |
| 40 | 0 | 52 | 0 | 56 | 0 | 59 | 1 | 59 | I | 7 | I | 11 | i | 15 | i | 14 | 1 | 23 | 1 | 21 28 |
| 42 | 0 | 56 | 1 | 0 | 1 | 4 | 1 | 8 | 1 | 12 | 1 | 17 | 1 | 21 | 1 | 25 | i | 30 | I | |
| 43 | 0 | 58 | 1 | 2 | 1 | 6 | ī | 11 | ī | 1.5 | 1 | 19 | 1 | 24 | 1 | 29 | 1 | _ | - | 35 |
| 14 | 1 | 0 | ı | 4 | L | 9 | 1 | 13 | 1 | 18 | | 22 | 1 | 27 | ī | 32 | i | 33 | L | 38 |
| 45 | 1 | 2 | 1 | 7 | 1 | 11 | 1 | 16 | 1 | 21 | 1 | 25 | 1 | 30 | 1 | 35 | 1 | 40 | ī | 42 |
| 45 | 1. | 4 | 1 | 9 | 1 | 14 | 1 | 19 | 1 | 24 | 1 | 29 | 1 | 34 | 1 | 39 | 1 | 44 | ī | 50 |
| 47 | 1 | 7 | 1 | 12 | 1 | 17 | 1 | .22 | 1 | 27 | 1 | 32 | 1 | 37 | 1 | 43 | 1 | 48 | 1 | 54 |
| 48 | 1 | 9 | 1 | 14 | 1 | 19 | 1 | 25 | 1 | 30 | 1 | 35 | 1 | 4 I | 1 | 47 | 1 | 53 | 1 | 59 |
| 49 | 1 | 12 | 1 | 17 | 1 | 22 | 1 | 28 | 1 | 33 | 1 | 39 | 1 | 45 | 1 | 51 | 1 | 57 | 2 | 3 |
| 50 | 1 | 14 | I | 20 | 1 | 25 | 1 | 31 | 1 | 37 | 1 | 43 | 1 | 49 | 1 | 55 | 2 | 2 | 2 | 8 |
| 51 | I | 17 | I | 23 | I | 29 | I | 35 | ı | 41 | I | 47 | 1 | 53 | 2 | 0 | 2 | 6 | 2 | 13 |
| 52 | 1 | 20 | 1 | 26 | 1 | 32
36 | I. | 38 | I | 45 | 1 | 51 | 1 | 58 | 2 | 5 | 2 | 12 | 2 | 19 |
| 53
54 | 1 | 23 | 1 | 29 | 1 | 40 | 1 | 46 | 1 | 49 | 2 | 56 | 2 2 | 3 | 2 | 10 | 2. | 17 | 2 | 25 |
| | - | 27 | - | 33 | 1 | - | - | _ | - | 53 | - | _ | - | _ | - | 15 | - | 23 | 2 | 31 |
| 55
56 | i | 30 | I | 37 | I | 44 | 1 | 51 | 2 | 58 | 2 2 | 5 | 2 | 13 | 2 | 21 | 2 | 29 | 2 | 33 |
| 57 | 1 | 34 | i | 45 | i | 52 | 2 | 0 | 2 | 8 | 2 | 16 | 2 | 25 | 2 | 34 | 2 | 36 | 2 | 45 |
| 58 | 1 | 12 | 1 | 40 | 1 | 57 | 2 | 5 | 2 | 14 | 2 | 22 | 2 | 32 | 2 | AI | 2 | 43 | | 53 |
| | I | 46 | 1 | 54 | 2 | 12 | 2 | 11 | 2 | 20 | 2 | 29 | 2 | 39 | 2 | 49 | 3 | 0 | 3 | 11 |
| 59 | 1 | 46 | 1 | 54 | 2 | 8 | 2 | 17 | 2 | 20 | 2 | 29
36 | 2 | 39
47 | 2 | 49 | 3 | 9 | 3 | 22 |
| 61 | ī | 56 | 2 | | 2 | 14 | 1- | _ | | 34 | 2 | 44 | 2 | 55 | 3 | 7 | 3 | 20 | 3333444 | 34 |
| 62 | 2 | 1 | 2 | 11 | 2 | 20 | 2 2 2 | 31 | 2 2 | 41 | 2 | 44
52 | 3 | 5 | 3 3 3 4 | 7
18
30
44 | 3 3 3 | 32 | 3 | 47 |
| 63 | 2 | 7 | 2 | 27 | 2 | 27
35
44 | 2 | 38 | 2 | 50 | 3 | 2 | 3 | 16 | 3 | 30 | 3 | 32
46 | 4 | 4 |
| 04 | 2 2 | 13 | 2 | 24 | 2 | 35 | | 47 | | 59 | 3 | 13 | 3 | 28 | 3 | 44 | 4 | 22 | 4 | 24 |
| 61
62
63
64
65
66 | 2 | 56
1
7
13
20
28 | 2 2 2 | 5
11
27
24
32
41 | 2 | 44 | 2 3 | 31
38
47
57
8 | 3 | 34
41
50
59
10
23 | 3 3 3 | 52
13
25
39 | 2 2 3 3 3 3 3 | 55
56
28
42
58 | 4 | 1 | 4 4 4 | 22 | 4 | |
| - | 2 | 28 | 2 | 41 | 2 | 54 | 3 | 8 | 13 | 23 | 3 | 39 | 3 | 50 | 14 | 21 | 4 | 50 | 6 | 0 |

TABLE XV. Of the Time in which the Sun rises from the Horizon one Degree of Altitude.

| Lat. | 12 | 0 | | Degrees | | clinatio | - | | - |
|----------------|-------------------|-------|--------------|-----------|--------------|--------------|---------------------|-------|----------|
| _ | 0 | 3 | 66: | 9 | 12 | 15 | 18 | 21 | 24 |
| 0 | 1 1 | 11 | 1 1 | 1 11 | 1 11 | 1 11 | 1 11 | 1 11 | 1 1 |
| 0 | 4 0 | 4 0 | 4 1 | 4 3 | 4 6 | 4 9 | 4 13 | 4 17 | 4 22 |
| 3 | 4 0 | 4 0 | 4 1 | 4 3 | 4 6 | 4 9 | 4 13 | 4 17 | 4 2 |
| | 4 1 | 4 1 | 4 2 | 4 4 | 4 7 | 4 10 | 4 14 | 4 18 | 4 29 |
| 9 | 4 3 | 4 3 | 4 4 4 7 | 4 6 | 4 9 4 12 | 4 12 4 15 | 4 16 | 4 21 | 4 27 |
| 15 | 4 9 | 4 9 | 4 10 | 4 12 | 4 15 | 4 18 | 4 22 | 4 28 | 4 34 |
| 18 | 4 13 | 4 13 | 4 14 | 4 16 | 4 19 | 4 22 | 4 26 | 4 32 | 7.7.7 |
| 21 | | 4 17 | 4 18 | 4 21 | 4 24 | 4 28 | 4 33 | 4 38 | 4 45 |
| 24 | | 4 23 | 4 25 | 4 27 | 4 30 | 4 34 | 4 39 | 4 45 | 4 53 |
| 27 | 4 29 | 4 30 | 4 32 | 4 34 | 4 37 | 4 41 | 4 47 | 4 55 | 5 3 |
| 30 | 4 37 | 4 38 | 4 40 | 4 42 | 4 45 | 4 50 | 4 57 | 5 5 | 5 14 |
| 33 | 4 46 | 4 47 | 4 49 | 4 52 | 4.56 | 5 1 | 5 9 | 5 18 | 5 29 |
| 36 | 4 57 | 4 58 | 5 1 | 5 4 | 5 8 | 5 13
5 28 | 5 21 | 5 32 | 5 46 |
| 39
42 | 5 9 | 5 25 | 5 14 5 28 | 5 17 | 5 22 | 5 28 | 5 36 | 5 48 | |
| 43 | 5 24 | 5 29 | 5 28
5 32 | 5 31 5 36 | 5 37
5 42 | 5 45 | 5 36
5 56
6 3 | 6 10 | 6 28 |
| 44 | 5 33 | 5. 35 | 5 38 | 5 42 | 5 49 | | 6 16 | 6 26 | 6 45 |
| 45 | 5 39 | | 5 44 | 5 48 | 5 55 | 5 58 | 6 17 | 6 34 | 6 55 |
| 46 | 5 45 | 5 47 | 5 50 | | 6 1 | 6 12 | 6 26 | 6 44 | 7 6 |
| 47 | 5 52 | 5 54 | 5 57 | 6 r | 6 8 | 6 20 | 6 35 | 6 55 | 7 19 |
| 48 | 5 59 | | | 6. 8 | 6 16 | 6 29 | 6 45 | 7 7 | 7 -34 |
| 49 | 6 6 | 6 8 | 6 11 | 6 16 | 6 25 | 6 38 | 6 56 | 7 20 | 7 50 |
| 50 | 6 14 | 6 16 | 6 20 | 6 23 | 6 34 | 6 48 | 7 8 | 7 33 | 8 7 |
| 51 | | - | | | | | 7 20 | 7 48 | |
| 52 | | 6 33 | 6 38 | 6 44 | 6 55 | 7 11 | 7 33 7 47 | 8 4 | 8 43 |
| 53
54 | The second second | 6 52 | 6 47 | 7 5 | 7 6 7 18 | 7 23 7 36 | 7 47 | 8 20 | 9 3 |
| 55 | | 7 1 | 7 7 | 7 16 | 7 30 | 7 49 | 8 16 | 8 37 | 9 48 |
| 55 | 7 8 | 7 11 | 7 18 | 7 28 | 7 43 | 8 4 | 8 32 | 9 18 | 10 18 |
| 57 | 7 19 | 7 23 | 7 30 | 7 41 | 7 58 | 8 21 | 8 59 | 9: 46 | 10 57 |
| 58 | 7 31 | 7 35 | 7 43 | 7 55 | 8 14 | 8 39 | 9 20 | 10 19 | 11 45 |
| 59
60 | 7 45 | 7 49 | 7 57 | 8 10 | 8 30 | 8 59 | 10 6 | 16 55 | 12 4 |
| 00 | 8 0 | 8 5 | 8 14 | 8 27 | 8 48 | 9 21 | | 14 36 | 14 0 |
| 62 | | 8 20 | 8 30 | 8 45 | 9 8 | 9-46 | 10 36 | 12 26 | 110 |
| 63 | | 1 | | 9 5 | 9 30 | 10 14 | 11 12 | 13 21 | 1.0 |
| $\frac{2}{64}$ | 2370 | 1 | 9 7 | 9 26 | 9 53 | 10 45 | 11 57 | 14 24 | - |
| 65 | | 9 14 | 9 28 | 9 49 | 10 18 | 11 30 | 11 55 | 15 38 | 130 |
| 66 | 9 50 | 9 34 | 9 49 | 10 14 | 10 47 | 11 58 | 14 10 | 17 5 | 100 |
| * 1 | 7.7 | 2 23 | | 10.41 | 20 | 12 40 | 115 40 | 9 0 | a report |

TABLE XVI.

For converting Time and Degrees, &c. mutually into each other.

| Time. | Motion | Time | Motion | Time | Motion | Time | Motion |
|-------|--------|-------|-------------|--------|--------|--------|--------|
| H. | 0 | , | 0 1 | , | 0 1 | , | 0 1 |
| 1 | , | " | 1 11 | . 11 | 1 11 | :11 | 1 11 |
| " | " | " | . 11 111 | | 11 111 | 111 | // /// |
| 1 | 15 | 1 | 0 15 | 21 | 2 15 | 41 | 10 15 |
| 2 | 30 | 2 | 0 30 | 22 | 5 30 | 4.2 | 10 30 |
| 3 | 45 | 3 | .0 45 | 23 | 5 45 | 43 | 10 45 |
| 4 | 60 | 4 | 1 0 | 24 | | 44 | 11 0 |
| 5 6 | 75 | 4 5 6 | 1 15 | 25 | 6 15 | 45 | 11 15 |
| 6 | 90 | .6 | 1 30 | 26 | 6 30 | 46 | 11 30 |
| 7 8 | 105 | 7 8 | 1 45 | 27 | 6 45 | 47 | 11 45 |
| | 120 | | 2 0 | 28 | 7 0 | 48 | 12 0 |
| 9 | 135 | 9 | 2 15 | 29 | 7 15 | 49 | 12 15 |
| 10 | 150 | 10 | 2 30 | 30 | 7 30 | 50 | 12 30 |
| 11 | 165 | 11 | 2 45 | 31 | 7 45 | 51 | 12 45 |
| 12 | 180 | 12 | 3 0 | 32 | 8 0 | 52 | 13 0 |
| 13 | 195 | 13 | 3 15 | 33 | 8 15 | 53 | 13 15 |
| 14 | 210 | 14 | 3 30 | 34 | 8 30 | 54 | 13 30 |
| 15 | 225 | 15 | 3 45 | 35 | 8 45 | . 55 | 13 45 |
| 16 | 240 | 16 | 4 0 | 36 | 9 0 | 50 | 14 0 |
| 17 | 255 | 17 | 4 15 | 37 | 9 15 | 57 | 14 15 |
| 18 | 270 | 18 | 4 30 | 38 | 9 30 | 58 | 14 30 |
| 19 | 285 | 19 | 4 45 | 39 | 9 45 | 59 | 14 45 |
| 20 | 300 | 20 | 5 0 | 40 | 10 0 | 60 | 15 0 |
| 21 | 315 | 19 | . 41 | 211 | | B H | A Mar |
| 22 | 330 | 33.8 | 2 2 2 2 2 2 | 1. 1. | | C TIPE | 1.10 |
| 23 | 345 | 121 | C 4 12 | 18 8 4 | 2 4 | 2 44 | 3013 |
| 24 | 360 | 23 | A PART | | E 3914 | 5 10 W | 23004 |

K k 2

TABLE

TABLE XVII. Of Refraction. By Dr. Bradley.

| App | | Re | fr. | Ap
A | p. lt. | Ref | r. | Ap | p. | Re | fr. | App
Alt. | R | efr. | App.
Alt. | Refr |
|-------|----|-----|------|---------|--------|-----|-----|------|-------|-----------|-----|-------------|---|------|--------------|-------|
| 0 1 | , | 1. | " | 0 | 1 | , | 11 | 0 | -1 | , | 0 | 0 | 1 | " | 0 | " |
| 0 | 0 | 33 | 0 | 4 | 50 | 10 | 11 | 10 | 30 | 5 | 0 | 26 | 1 | 56 | 59 | 34 |
| | 5 | 32 | 10 | 5 | 0 | 9 | 54 | 10 | 45 | 4 | 53 | 27 | 1 | 51 | 60 | 33 |
| 100 | 0 | 31 | 22 | 5 | 10 | 9 | 38 | 11 | 0 | 4 | 47 | 28 | 1 | 47 | 61 | 32 |
| | 5 | 30 | 35 | 5 | 20 | 9 | 23 | 11 | 15 | 4 | 40 | 29 | I | 42 | 62 | 30 |
| 2 | 0 | 29 | 50 | 5 | 30 | 9 | 8 | 11 | 30 | 4 | 34 | 30 | 1 | 38 | 63 | 29 |
| | 0 | 28 | 22 | 5 | 40 | 8 | 54 | 11 | 45 | 4 | 29 | 31 | 1 | 35 | 64 | 28 |
| . 3 | 12 | 28 | 5 | 5 | 50 | | 41 | 12 | 0 | 4 | 23 | 32 | 1 | 31 | 65 | 26 |
| | 36 | 27 | 30 | 6 | 0 | | 28 | 12 | 20 | | 16 | 33 | I | 28 | 66 | 25 |
| | 10 | 27 | 0 | 6 | 10 | - | 15 | 12 | 40 | 100 | 9 | 34 | I | 24 | 67 | 24 |
| 15 | 0 | 25 | 42 | - | 20 | _ | 3 | 13 | 0 | - | 3 | 35 | I | 21 | 68 | 23 |
| 1 | 0 | 24 | 29 | 6 | 30 | | 51 | 13 | 20 | 10 | 57 | 36 | I | 18 | 69 | 22 |
| | 10 | 23 | 20 | 6 | 40 | | 40 | 13 | 40 | | 51 | 37 | 1 | 16 | 70 | 21 |
| 0.49 | 20 | 22 | 15 | 6 | 50 | | 30 | 14 | | 3 | 45 | 38 | I | 13 | 71 | 19 |
| | 30 | 21 | 15 | 7 | 10 | | 20 | 14 | | 10 | 40 | 39 | I | 10 | 72 | 18 |
| - | 40 | 20 | | 7 | - | - | 600 | 14 | 40 | | 35 | 40 | 1 | - | 73 | 17 |
| | 50 | 19 | 25 | 7 | 20 | | 2 | 15 | C | | 30 | 41 | 1 | 5 | 74 | 16 |
| 2 | 0 | 18 | 02 | 7 | 30 | | | 15 | 30 | | 24 | 42 | 1 | 3 | 75 | 15 |
| 1 | 10 | 17 | 48 | 7 | 40 | | 45 | | | 10 | 17 | 43 | 1 | 1 | 76 | 14 |
| | 20 | 17 | 4 | 8 | 55 | 1 | 37 | 16 | 30 | | 10 | 44 | | 59 | 77 | 13 |
| | 39 | 1 | 51.0 | 1 | - | - | 29 | 11- | - | - | 4 | 45 | - | 57 | 78 | 12 |
| | 40 | 15 | | 8 | 1 25 | 1 | 22 | 11 | 30 | | 59 | 46 | 1 | 55 | 79 | 11 |
| 10.00 | 50 | 15 | 9 | 8 | 1 1 | | | | | | 54 | 47 | 1 | 53 | 80 | 10 |
| 3 | 9 | 14 | | 11 0 | | | | 11 | 100 | | 49 | 48 | 1 | 51 | 81 | 8 |
| 3 | 20 | 14 | | 11 - | | | - | 19 | | | 44 | 49 | 1 | 49 | 83 | 1 . 1 |
| 3 | _ | 13 | - | 1- | 1 | - | 55 | | - | - | 39 | 50 | - | _ | - | 6 |
| - 1 | 30 | | | 11 / | | 10 | 48 | | 8 - 7 | | 35 | 51 | 1 | 46 | 84 | |
| - | 40 | | | | | 1 / | 42 | 20 | | 20 M. St. | 31 | 52 | - | 44 | 85 | 5 |
| 3 | 50 | 1 | , | | | 10 | | | | | 27 | 53 | 1 | 43 | 87 | 4 |
| 4 | 10 | | | | | | | 11 | 9 | | 20 | | 1 | 41 | 88 | 2 |
| 4 | _ | | | -11- | _ | _ | _ | - | - | - | _ | 23 | + | 40 | | 1 |
| 4 | 20 | | | 11 3 | | | | 11 - | | | 14 | 11 - | - | 38 | 89 | 0 |
| 14 | 30 | | | | | 5 | | | | 2 | 7 2 | 57 | 1 | 37 | 90 | 1 |
| 4 | 40 | 110 | 20 | 110 | 1 | 2 3 | 7 | 1125 | - | 114 | 2 | 1 50 | 1 | 35 | | |

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or | Of the | Sun's rallax Alti- | TA
Of the Si | BLE X | |
|---|---|---|---|--------------------------|--|---------------------------------|
| Height
of
the Eye
Feet. | 7 | Altit. | Paral. | Days
of the
Month, | The Sun's
Semidia-
meter. | Days
of the
Month. |
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1 21
1 39
1 55
2 8
2 20
2 31
2 42
2 52
3 18
3 34
4 16
4 28
4 40
4 52
5 34
5 14
5 39
6 24
6 44
7 23
7 59
8 32
9 33
9 33 | 0
20
34
45
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62
69
76
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90 | 8½
8
7
6
5
4
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1
0 | Sun's Se | 16 19 16 19 16 18 16 17 16 15 16 12 16 11 16 8 16 5 16 2 16 0 15 57 15 54 15 52 15 50 15 49 15 48 15 47 15 47 15 47 hence it a | for the
r is fuf-
or com- |

| TABLE XXI. | Of the Sun's Right-Ascension and the |
|------------|--------------------------------------|
| 1 | Equation of Time. |

| - | | JANU | JARY. | Bs / 6 |
|----------|-------------|-------------|--------------|-------------------------|
| | Leap Year. | First Year. | Second Year. | Third Year. |
| | 1776 1780 | 1773 1777 | 1774 1778 | 1775 1779 |
| | 1784 1788 | 1781 1785 | 1782 1786 | 1783 1787 |
| | Sun's Clock | Sun's Clock | Sun's Clock | Sun's Clock |
| D | RtAf-before | RtAf-before | RtAf-before | RtAf-before |
| 81 | cen.in the | cen.in the | cen.in the | cen.in the |
| Degrees. | Time Sun. | Time Sun. | Time Sun. | Time Sun. |
| | h / / / | h / / // | 11 | h / / / |
| 1 | 18 47 4 1 | 18 50 4 21 | 18 49 4 11 | 18 48 4 7 |
| 2 | 18 51 4 29 | 18 54 4 49 | 18 53 4 43 | 18 52 4 35 |
| 3 | 18 56 4 57 | 18 58 5 17 | 18 58 5 11 | 18 59 5 3 |
| 4 | 19 0 5 24 | 19 3 5 44 | 19 2 5 39 | 19 1 5 30 |
| 5 | 19 4 5 51 | | 1 | |
| 6 | 19 9 6 18 | | 19 11 6 32 | 19 10 6 23 |
| 7 8 | 19 13 6 44 | 19 17 7 3 | 19 15 6 58 | |
| | 19 18 7 9 | 19 25 7 54 | 19 24 7 48 | 19 19 7 15 |
| 9 | 19 26 7 59 | 19 30 8 18 | 19 28 8 12 | 19 27 8 5 |
| - | | 19 34 8 42 | 19 33 8 35 | 19 32 8 29 |
| 11 | 19 31 8 23 | 19 38 9 5 | 19 37 8 58 | 19 36 8 53 |
| 13 | 19 39 9 9 | 19 43 9 27 | 19 41 9 21 | 19 40 9 15 |
| 14 | 19 44 9 31 | 19 47 9 49 | 19 46 9 43 | 19 45 9 37 |
| 15 | 19 48 9 53 | 19 51 10 10 | 19 50 10 4 | 19 41 9 58 |
| 16 | 19 52 10 14 | 19 56 10 30 | 19 54 10 24 | 19 53 10 19 |
| 17 | 19 6 10 34 | 19 60 10 50 | 19 59 10 44 | 19 58 10 39 |
| 18 | 20 1 10 54 | 20 411 8 | 20 3 11 3 | 20 2 10 58 |
| 19 | 20 5 11 12 | 20 811 26 | 20 7 11 21 | 20 0 11 10 |
| 20 | 20 911 31 | 20 13 11 44 | 20 11 11 39 | 20 10 11 34 |
| 21 | 20 14 11 48 | 20 17 12 0 | 20 16 11 56 | 20 15 11 51 |
| 22 | 20 18 12 4 | 20 21 12 16 | 20 28 12 12 | 20 19 12 7 |
| 23 | 20 22 12 20 | | 20 24 12 27 | 20 23 12 23 |
| 24 | | 20 29 12 45 | 20 28 12 41 | 20 27 12 38 20 31 12 52 |
| 25 | 20 30 12 49 | | | |
| 26 | | 20 38 13 11 | 20 37 13 8 | 20 35 13 5 |
| 27 | 20 39 13 15 | 20 42 13 23 | 20 41 13 20 | 20 44 13 29 |
| 28 | | | 20 45 13 32 | 20 48 13 39 |
| 29 | | 20 50 13 44 | 20 53 13.52 | 20 52 13 49 |
| 30 | | | 20 57 14 1 | 20 56 13 58 |
| 13, | 1 201.2 26 | 1 3 1 | 1 311 | 105 0 33 |

| | * * * * * * * * * * * * * * * * * * * | ere upday | 4 - | | 2.700 | 111000 | 100 | UAR | 10000 | | | | ***** | | |
|----------|---------------------------------------|-----------|-----|----|-------|--------|-----|-----|-------|----|----------|---------|-------|-----|-----|
| | Leap | | | F | irit | Yea | ir. | Sec | onc | Ye | ar. | T | nird | Ye | ar. |
| | 1776 | 178 | | 17 | | | 77 | 17 | | | 78 | 177 | | | 75 |
| | 1784 | 178 | 1 | 17 | 81 | 17 | 85 | 17 | | - | 86 | 178 | 33 | 17 | 87 |
| | Sun's | | | _ | n's | | ck | | n's | | ock | | - | Clo | |
| D | RtAf- | | | | Aſ- | - | ore | 1 | | | ore | | | bef | |
| 139 | Time | Sun | ٠, | | n.in | F 12 | n. | | me | th | | cen | | Sa | - |
| Degrees. | - | - 1 - | - | h | 1 | 1 | // | - | / | 1 | n. | Ti | | 7 | и. |
| - | - | | _ | n | | _ | - | h | | - | " | h | 1 | - | _ |
| 1 | 20 59 | | 4 | 21 | | 14 | - | 21 | . 1 | | 10 | 21 | | 14 | 16 |
| 2 | 21 3 | | 12 | 21 | | 14 | | 21 | -5 | 14 | 16 | 21 | 4 | | 1 |
| 3 | 21 7 | | 18 | 21 | | 14 | 22 | 21 | - | 14 | 19 | 21 | | 14 | |
| 4 | 21 11 | | 29 | 21 | | 14 | 32 | 21 | 17 | 14 | | 21 | | 14 | 20 |
| 5. | | - | _ | - | _ | 14 | 36 | 21 | - | - | 33 | - | - | - | _ |
| 6 | 21 19 | | 33 | 21 | 22 | 14 | 39 | 21 | | 14 | • | 21 | - | 14 | 3 |
| 7 | 21 27 | | 39 | 21 | | 14 | 41 | 21 | | 14 | 40 | 21 | | 14 | 37 |
| 9 | 21 31 | - 0 0 | 43 | 21 | 34 | | 42 | 21 | - | 14 | 43 | 21 | | 14 | 4 |
| 10 | 21 35 | | 12 | 21 | | 14 | 43 | 21 | | 14 | | 21 | | 14 | |
| 11 | 21 29 | - | 12 | 21 | - | 14 | 42 | 21 | _ | 14 | _ | 21 | _ | 14 | _ |
| 12 | 21 43 | - 5 | 11 | 21 | | 14 | 41 | 21 | | 14 | | 21 | - | | 4 |
| 13 | 21 47 | 14 | 10 | 21 | | 14 | 39 | 21 | | 14 | | 21 | 48 | | 4 |
| 14 | 21 51 | 14 3 | 38 | 21 | 53 | 14 | 37 | 21 | 53 | 14 | 38 | | | 14 | 3 |
| 15 | 21 55 | 14 3 | 35 | 21 | 58 | 14 | 33 | 21 | 57 | 14 | 35 | 21 | 56 | 14 | 3 |
| 16 | 21 59 | 14 3 | 32 | 22 | 2 | 14 | 29 | 22 | 1 | 14 | 31 | 22 | . 0 | 14 | 3 |
| 17 | 22 3 | | 8 | 22 | 6 | 14 | 24 | 22 | 5 | 14 | 26 | 22 | | 14 | 2 |
| 18 | 22 7 | | 23 | 22 | 9 | 14 | 19 | 22 | | 14 | 21 | 22 | 17 | 1 | 2 |
| 19 | 22 10 | 7 | 7 | 22 | 13 | | 12 | 22 | | 14 | 15 | 12 | 11 | | 10 |
| 20 | 22 14 | - | 1 | 22 | 17 | 14 | 5 | 22 | _ | 14 | 8 | 22 | | - | 9 5 |
| 21 | 22. 18 | | | 22 | 21 | 13 | 58 | 22 | 200 | 14 | 1 | 22 | - | 14 | I |
| 22 | 23 22 | | 6 | 22 | 24 | - | 50 | 22 | | 13 | 53 | | | 13 | |
| 23 | 22 25 | - | 8 | 22 | 32 | - | 41 | 22 | | 13 | 45
36 | 10. 15. | 30 | | |
| 25 | 22 29 | | 9 | 22 | 36 | | 31 | 22 | | 13 | 26 | | 34 | | 3 |
| 26 | - | - | 0 | 22 | 49 | - | ro | 22 | _ | 13 | - | 22 | 38 | | _ |
| 27 | 22 37 | | 9 | 22 | 44 | - 1 | 59 | 22 | 43 | - | 15 | | 42 | | 1 |
| 28 | 100 | | 8 | | 47 | 1.3 | 47 | | 46 | | 53 | 22 | | 12 | 5 |
| 29 | 22 48 | | 6 | | 8 | | 4 | . 1 | | | 13 | - 1= | CT | 1 | 08 |
| | 35 | 11 | 8 | | 0 | | 20 | 4 1 | 0 | 1 | 22 | 10 | 8.0 | 1 | |
| 1 | 108 0 | 11 | 1. | | 1 | | 1 | 4 | 24 | 1 | 200 | 4 5 | . 0 | 1 | 11 |

| *** | | 1/ 1/96 | Y | MA | RCH. | | | |
|----------|--------|---------|--------|--------|--------|--------|--------|--------|
| . +4 | Leap | Year. | First | Year. | Second | Year. | Third | Year |
| 901 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 58 | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| 300 | Sun's | Clock | Sun's | Clock | Sun's | Clock | Sun's | |
| D | | before | RtAf- | before | | before | RtAf- | before |
| Degrees. | cen.in | the | cen.in | the | cen in | the | cen.in | |
| 2 | Time | Sun. | Time | Sun. | Time | Sun. | Time | Sun. |
| 9 | h / | 7 7 | h / | 7 11 | h / | 1 11 | h / | 1 11 |
| 1 | | 12 33 | 22 51 | 12 36 | 22 50 | 12 38 | 22 49 | 12 43 |
| 2 | 22 56 | 12 20 | 22.55 | | 22 54 | 12 26 | | 12 30 |
| 2 | 22 59 | 12 7 | 22 .59 | 12 10 | 22 58 | 12 13 | 22 57 | 12 17 |
| 4 | 23 3 | 11 53 | 23 2 | 11 57 | 23 1 | 12 0 | | 12 4 |
| 5 | 23 7 | 11 39 | 23 6 | 11 43 | 23 5 | 11 46 | 23 4 | 11,50 |
| 6 | 23 11 | 11 24 | 23 10 | 11 28 | 23 9 | 11 32 | 23 8 | 11 36 |
| 7 | | 11 9 | 23 13 | 11 13 | 23 12 | 11 17 | 23 11 | |
| 8 | 23 18 | 10 54 | 23 17 | 10 58 | 23 16 | | 23 15 | 11 6 |
| 9 | - | 10 38 | 23 21 | 10 43 | 23 20 | 10 46 | 23 19 | 10 51 |
| 10 | 23 25 | 10 22 | 23 25 | 10 27 | 23 23 | 10 30 | 23 23 | 10 35 |
| 11 | 23 29 | 10 6 | 23 28 | 10 11 | 23 27 | 10 14 | 23 26 | 10 19 |
| 12 | 23 33 | 9 49 | 23 32 | 9 54 | 23 31 | 9 57 | 23 30 | 10 3 |
| 1.3 | 23 36 | 9 32 | 23 35 | 9.37 | 23 34 | 9 40 | 23 34 | 9 46 |
| 14 | 23 40 | 9 15 | 23 39 | 9 20 | 23 38 | 9 23 | 23 37 | 9 29 |
| 15 | 23. 44 | 8 58 | 23 43 | 9 3 | 23 42 | 9 6 | 23 41 | 9 12 |
| 16 | 23 47 | 8 40 | 23 46 | 8 45 | 23.45 | 8 49 | 23 44 | 8 54 |
| 17 | 23.51 | 8 22 | 23 50 | 8 27 | 23 49 | 8 31 | 23 48 | 8 37 |
| 18 | 23 55 | 8 5 | 23 54 | 8 9 | 23 53 | .8 13 | 23 52 | 8 18 |
| 19 | 23 58 | 7 46 | 23 57 | 7 51 | 23 56 | 7 55 | 23 55 | 8 1 |
| 20 | 0 2 | 7 28 | 0 1 | 7 33 | 23 60 | 7 36 | 23 59 | 7 42 |
| 21 | 0 5 | 7 10 | 0 5 | 7 14 | 0 4 | 7 18 | 0 3 | |
| 22 | 0 9 | 6 51 | 0 8 | 6 56 | 0 7 | 7 0 | 0 6 | |
| 23 | 0 12 | 6 33 | 0 12 | 6 37 | 10 11 | 6 41 | 0 10 | |
| 24 | 0 16 | 6 14 | 0 15 | 6 18 | 0 14 | 6 23 | 0 14 | |
| 25 | 0 20 | 6 55 | 0 19 | 5 59 | 0 18 | 6 4 | 0 17 | |
| 26 | 0 24 | 5 37 | 0 23 | 5 41 | 0 22 | 5 45 | 0 21 | |
| 27 | 0 27 | 5 18 | 0 26 | 5 22 | 0 25 | 5 27 | 0 24 | |
| 28 | 0 31 | 4 49 | 0 30 | | 0 29 | 5 8 | 0 28 | |
| 29 | 0 34 | 4 41 | 0 34 | 4 44 | 0 33 | 4 50 | 0 32 | |
| 30 | 0 38 | 4.22 | 0 37 | 4 26 | 0 36 | 4 31 | 0 35 | |
| 31 | 0 42 | 4 3 | 0 41 | 4 7 | 0 40 | 4 13 | 0 39 | 4 17 |

| 1 | 1 | | | AP | RIL. | |
|----------|--------------|--------|--------|--------------|--------------|------------|
| 1 | Leap | Year. | First | Year. | Second Year. | |
| 1 | 1776 | 1780 | 1773 | 1777 | 1774 1778 | 1775 1779 |
| | 1784 | 17,88 | 1781 | 1785 | 1782 1786 | |
| | | Clock | Sun's | Clock | Sun's Clock | |
| ۵ | | before | | before | RtAf- before | |
| Degrees. | cen.in | the | cen.in | the | cen.in the | |
| 00 | Time | Sun. | Time | Sun. | Time Sun. | Time Sun. |
| 8 | h. / | 1 11 | h ' | 1 11 | h / / " | h / / / |
| 1 | 0.45 | 3 45 | 0 45 | 3 49 | 0 44 3 54 | 0 43 3 5 |
| 2 | 0 49 | 3 27 | 0 48 | 3 31 | 0 47 3 36 | |
| 3 | 0 53 | 3 8 | 0 52 | 3 13 | 0 51 3 18 | 1 1 1 |
| 4 | | 2 50 | 0.55 | 2 55 | 0 54 3 0 | |
| .5 | 1 0 | 2 12 | .0 59 | 2 37 | 0 58 2 42 | |
| 6 | 1 4 | 2 15 | 1 3 | 2 19 | 1 2 2 24 | |
| 7.8 | 1 .7 | 1 57 | 1 6 | 2 2 | 1 5 2 6 | |
| | 1 11 | 1 40 | 1 10 | 1 45
1 28 | 1 9 1 49 | |
| 9 | 1 15 | 1 23 | 1 14 | 1 20
1 11 | 1 12 1 32 | |
| 10 | | | | | | |
| 11. | 1 22 | 0 50 | 1 21 | 0 55 | 1 20 0 59 | 1 19 1 |
| 12 | 1 26 | 0 34 | 1 25 | 0 39 | 1 24 0 43 | |
| 13 | 1 29 | 0 19 | | 0 8 | 1 27 0 27 | |
| 14 | 1 33 | oafii | 1 32 | | 1 35 oaft.4 | 1 34 oaft. |
| 15 | _ | - | 1 | | | |
| | 1 40 | | 1 39 | | 1 38 0 19 | |
| 17
18 | I 44
I 48 | 0 40 | 1 43 | 0 37 | 1 42 0 33 | |
| 19 | 1 51 | 1 7 | 1 51 | 1 4 | 1 50 1 0 | |
| 20 | 1 55 | 1,20 | 1 54 | 1 18 | 1 53 1 14 | |
| 21 | 1 59 | 1 33 | 1 58 | 1 31 | 1 57 1 26 | |
| 22 | | 1 45 | 2 2 | | 2 1 1 39 | |
| 23 | 2 3 | 1 57 | 2 6 | 1 55 | 2 4 1 52 | |
| 24 | 2 10 | 2 8 | 2 9 | | 2 8 2 4 | |
| 25 | 2 14 | 2 19 | 2 13 | | 2 12 2 15 | |
| 26 | 2 18 | 2 29 | 2 17 | 2 28 | 2 16 2 26 | |
| 27 | 2 21 | 2 39 | 2 21 | 2 38 | 2 20 2 36 | |
| 28 | 2 25 | 2 48 | 2 24 | 2 48 | 2 23 2 45 | 2 22 2 4 |
| 29 | 2 29 | 2 57 | 2 28 | 2 56 | 2 27 2 53 | |
| 30 | 2 33 | 3 5 | 2 32 | 3 4 | 2 31 3 2 | 2 30 3 |

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| | 1-1 |
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| | 110 |
| | 1.9 |
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| | 1-3 |
| | 1 |
| | 121 |
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| | 125 |
| | 145 |
| | 1- |
| | 100 |
| | 1 120 |
| | 1-0 |
| | 1 |
| | 127 |
| | 1 |
| | 120 |
| | 140 |
| | 1 |
| | 120 |
| _ | 109 |
| _ | 1 |
| | |
| | 130 |
| | 30 |
| ı | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 |
| ı | 30 |
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| I | 30 |

| | | | 141,09 | MA | AY. | | | |
|----------|--------|-------|--------|-------|--------|-------|--------|-------|
| | Leap ' | Vear. | First | lear. | Second | Year. | Third | Year. |
| | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 13 | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| - | - | lock | | Clock | | Clock | | Clock |
| 3.1 | Sun's | | | | RtAf- | after | RtAf- | after |
| Degrees. | RtAf- | after | RtAf- | after | | the | | the |
| 20 | cen.in | the | cen.in | the | cen.in | | Cen.in | Sun. |
| ee | Time | Sun. | Time | Sun. | Time | Sun. | | |
| | h / | 1 11 | h ′ | 1 11 | h / | 1 11 | h / | 1 11 |
| 1 | 2 3 | 3 13 | 2 36 | 3 12 | 2 35 | 3 10 | 2 34 | 3 7 |
| 2 | 2 41 | 3 20 | 2 39 | 3 19 | 2 38 | 3 17 | 2 38 | 3 15 |
| 3 | 2 44 | 3 27 | 2 43 | 3 26 | 2 42 | 3 25 | 2 41 | 3 23 |
| 4 | 2 48 | 3 33 | 2 47 | 3 32 | 2 46 | 3 31 | 2 45 | 3 30 |
| 5 | 2 52 | 3 39 | 2 51 | 3 37 | 2 50 | 3 36 | 2 49 | 3 36 |
| 6 | 2 56 | 3 44 | 2 55 | 3 42 | 2 54 | 3 42 | 2 53 | 3 41 |
| 7 | 2 51 | 3 48 | 2 59 | 3 47 | 2 58 | 3 46 | 2 57 | 3 45 |
| 7 | 3 4 | 3 52 | 3 3 | 3 50 | 3 2 | 3 49 | 3 1 | 3 49 |
| 9 | 3 8 | 3 55 | 3 7 | 3 54 | 3 6 | 3 53 | 3 5 | 3 53 |
| 10 | 3 11 | 3 58 | 3 11 | 3 56 | 3 9 | 3 56 | 3 8 | 3 56 |
| 11 | 3 15 | 4 0 | 3 14 | 3 58 | 3 13 | 3 58 | 3 12 | 3 58 |
| 12 | 3 19 | 4 1 | 3 18 | 3 59 | 3 17 | 4 0 | 3 16 | 4 0 |
| 13 | 3 23 | 4 2 | 3 22 | 4 1 | 3 21 | 4 1 | 3 20 | 4 1 |
| 14 | 3 27 | 4 2 | 3 26 | 4 1 | 3125 | 4 2 | 3 24 | 4 2 |
| 15 | 3 31 | 4 2 | 3 30 | 4 1 | 3 29 | 4 2 | 3 28 | 4 2 |
| 16 | 3 35 | 4 1 | 3 34 | 4 0 | 3 33 | 4 1 | 3 32 | 4 2 |
| 17 | 3 39 | 3 59 | | 3 59 | 3 37 | 4 0 | 3 36 | |
| 18 | 3 43 | | 3 42 | 3 58 | 3 41 | 3 59 | .3 40 | |
| 19 | 3 47 | 3 54 | 3 46 | 3 55 | 3 45 | 3 56 | 3 44 | 3 57 |
| 20 | 3 51 | 3 51 | 3 50 | 3 52 | 3 49 | 3 53 | 3 48 | |
| 21 | 3 55 | 3 47 | 3 54 | 3 49 | 3 53 | 3 50 | 3. 52 | 3 5 |
| 22 | 3 59 | 3 43 | 3 58 | 3 45 | 3 57 | 3 47 | 3 56 | 3 4 |
| 23 | 4 3 | | 4 2 | | 4 1 | 3 43 | 4 0 | |
| 24 | 4 7 | 3 33 | 4 6 | | 4 5 | 3 37 | 4 4 | |
| 25 | 4 11 | 3 28 | - | - | | | 4 8 | - |
| 26 | 4 15 | | | | | 3 26 | 4 12 | |
| 27 | 4.19 | | | | 1 | 3 20 | | 10 |
| 28 | 4 23 | | 1 1 1 | 1 . | | 3 13 | 4 20 | 1 3 |
| 29 | 4 27 | | | 100 | | 3 5 | | |
| 30 | 4 4 31 | | | | 4 29 | | 4 28 | |
| 31 | 4 35 | 2 44 | 4 34 | 2 47 | 4 33 | 2 49 | 4 32 | 2 5 |

| 1 | | | | | | | | | NE. | 1 | | | | | | |
|----------|-------|----|-----|-----|-----|-------|-------|-----|------|------|-----|-----|-----|-----|-----|-----|
| 1 | Lea | | | | Fi | rft ! | l'ear | | Seco | ond | | | Th | ird | Ye | ar. |
| | 1776 |) | | 80 | 177 | 3 | 17 | 77 | 177 | 4 | 17 | 78 | 177 | 5 | 17 | 79 |
| 1 | 1784 | + | 17 | 88 | 178 | 1 | 17 | 85 | 178 | 2 | 17 | 86 | 178 | 3 | 17 | 87 |
| - | Sun | 51 | Clo | ck | Sur | i's l | Clo | ck | Sun | 's l | Clo | | | 28 | | |
| | RtA | f- | aft | er | Rt | | aft | | Rt | | aft | | Rt | | aft | |
| eg | cen.i | | th | | cen | .in | th | e | cen | in | th | | cen | | th | |
| Degrees. | Tim | e | Su | n. | Ti | me | Su | n. | Tir | ne | Su | n. | Tir | | Su | |
| es . | h | 7 | 1 | # | h | 1 | - | 11 | h | - | , | // | h | 1 | 1 | 11 |
| 1 | 4 4 | 10 | 2 | 35 | 4 | 39 | 2 | 38 | 4 | 37 | 2 | 40 | 4 | 35 | 2 | 42 |
| 2 | 4 4 | 4 | 2 | 26 | 4 | 43 | 2 | 28 | 4 | 42 | 2 | 31 | 4 | 41 | 2 | 34 |
| 3 | | 8 | 2 | 17 | 4 | 47 | 2 | 19 | 4 | 46 | 2 | 21 | 4 | 45 | 2 | 24 |
| 4 | | 2 | 2 | 7 | 4 | 51 | 2 | 9 | 4 | 50 | 2 | 12 | 4 | 49 | 2 | 15 |
| 5 | 4 5 | 6 | 1 | 56 | 4 | 55 | 1 | 58 | 4 | 54 | 2 | 4 | 4 | 52 | 2 | - 5 |
| 6 | 5 | 0 | 1 | 46 | 4 | 59 | 1 | 48 | 4 | 58 | I | 51 | 4 | 57 | 1 | 54 |
| - 4 | 5 | 4 | 1 | 35 | | 3 | 1 | 37 | 5 | 2 | 1 | 40 | 5 | 1 | 1 | 43 |
| 7 8 | 5 | 8 | 1 | 23 | 5 | 7 | 1 | 25 | 5 | 6 | 1 | 28 | 5 | 6 | 1 | 3 |
| 9 | 5 1 | 12 | 1 | 12 | 5 | 11 | 1 | 14 | 5 | 10 | 1 | 17 | 5 | 9 | 1 | 20 |
| 10 | 5 .1 | 17 | 1 | 0 | 5 | 16 | I | 2 | 5 | 14 | 1 | 5 | _5 | 13 | 1 | 9 |
| 11 | | 21 | 0 | 48 | 5 | 20 | 0 | 50 | 5 | 19 | 0 | 53 | 5 5 | 18 | 0 | 57 |
| 12 | | 25 | 0 | 36 | 5 | 24 | 0 | 38 | 5 | 23 | 0 | 41 | 5 | 22 | 0 | 4 |
| 13 | | 29 | 0 | 23 | 5 | 28 | 0 | 26 | 5 | 27 | 0 | 29 | 5 | 26 | 0 | 3 |
| 14 | | 33 | 0 | 11 | 5 | 32 | 0 | 13 | 5 | 3.1 | 0 | 16 | 5 | 30 | 0 | 20 |
| 15 | - | 37 | OD | efz | 5 | 36 | | 1 | 5 | 35 | 0 | 4 | 5 | 34 | | |
| 16 | | 12 | 0 | 15 | 5 | 41 | o b | .12 | 5 | 39 | ob | efg | 5 | | ob | |
| 17 | 5 4 | 46 | D | 28 | 5 | 45 | 0 | 25 | 5 | 44 | 0 | 22 | 5 | 43 | | 1 |
| 18 | | 19 | 0 | 41 | 5 | 49 | | 36 | 5 | 48 | 0 | 33 | 5 | 47 | | 3 |
| 19 | 5 | 54 | 0 | 54 | 5 | 53 | 0 | 50 | 5 | 52 | 0 | 47 | 5 | 54 | 0 | |
| 20 | | 58 | 1 | 7 | 5 | 57 | 1 | 3 | 5 | 56 | - | 59 | 5 | 55 | | 5 |
| 21 | 6 | 2 | 1 | 20 | 6 | 1 | 1 | 16 | 6 | | | 12 | 5 | 59 | | |
| 22 | 6 | 6 | 1 | 33 | 6 | 5 | 1 | 29 | 6 | | 1 | 26 | 6 | - | 1 | |
| 23 | | 11 | 1 | | 6 | 10 | | 42 | 6 | | | 39 | 6 | | | |
| 24 | | 15 | 1 | 59 | 6 | 14 | | 54 | 6 | | | 51 | 6 | | | - |
| 25 | - | 19 | 2 | 11 | 6 | 18 | - | 7 | 100 | - 11 | - | | - | - | - | - |
| 26 | | 23 | 2 | 24 | 6 | 22 | | 20 | 6 | | 1 | | 6 | | | |
| 27 | | 27 | 2 | 36 | 6 | 26 | | 32 | 6 | - 4 | | 1 | 6 | | 1 | |
| 28 | 6 | 31 | 12 | 48 | 6 | 30 | | 44 | 6 | | | | 6 | | | |
| 29 | 6 | 36 | 3 | 0 | 6 | 35 | | 56 | 6 | | 2 | 20 | 6 | | | , |
| 30 | 6 | 40 | 3 | 12 | 0 | 39 | 3 | - 8 | 6 | 38 | 3 | 5 | . 6 | 37 | 3 | |

| - | Company of the Company | JUI | | 1 |
|---------------|------------------------------------|--|--|---|
| 1 | Leap Year. | First Year. | Second Year. | Third Year. |
| | 1776 1780
1784 1788 | 1773 1777
1781 1785 | 1774 1778
1782 1786 | 1775 1779
1783 1787 |
| - | 1784 1788 | | | |
| | Sun's [Clock | Sun's Clock | Sun's Clock | Sun's Clock |
| 0 | RtAf-before | RtAf-before | RtAf-before | RtAf-before |
| 39 | cen.in the | cen.in the | cen.in the
Time Sun. | cen.in the
Time Sun. |
| Degrees. | Time Sun. | Time Sun. | The second secon | |
| | h / / // | h / / " | 1 | |
| 1 2 | 6 44 3 23 | 6 43 3 20 | 5 42 3 17 | 6 41 3 14 |
| 2 | 6 48 3 34 | 6 47 3 32, | 6 46 3 29 | 6 45 3 26 |
| 3 | 6 52 3 45 6 56 3 56 | 6 51 3 43 | 0 50 3 40 | 6 49 3 37 |
| 4 | | 6 51 3 43
6 56 3 54
6 59 4 4 | 6 54 3 52 6 58 4 2 | 6 53 3 49 6 57 3 59 |
| 5 | 7 0 4 6 | | | |
| 3 4 5 6 78 | 7 4 4 16 | 7 3 4 15 7 8 4 24 | 7 2 4 12 | 7 1 4 9 7 5 4 19 |
| 7 | 7 9 4 26
7 13 4 35
7 17 4 44 | | 7 6 4 22 | 7 5 4 19 7 10 4 29 |
| | 7 13 4 35 7 17 4 44 | 7 12 4 34 7 16 4 43 | 7 11 4 31 7 15 4 40 | 7 10 4 29 7 14 4 38 |
| 9 | 7 17 4 44 7 21 4 53 | 7 16 4 43 | 7 15 4 40 7 19 4 50 | 7 18 4 47 |
| 9
10
11 | | | | |
| | 7 25 5 1 7 29 5 8 | 7 24 4 59
7 28 5 7
7 32 5 14
7 36 5 21
7 40 5 28 | 7 23 4 59 | |
| 12 | 1 1 1 1 1 | 7 28 5 7 7 32 5 14 | 7 27 5 5 7 31 5 12 | 7 26 5 3 7 30 5 11 |
| 13 | 1 00 0 | 7 36 5 21 | 7 35 5 20 | 7 34 5 18 |
| 14 | 7 37 5 22 7 41 5 29 | 7 40 5 28 | 7 39 5 26 | 7 38 5 24 |
| 15
16 | | | 1-02 | 7 42 5 30 |
| 10 | 7 45 5 35 7 49 5 40 | 7 44 5 33
7 48 5 38
7 5 ² 5 43
7 5 ⁶ 5 47 | 7 43 5 31
7 47 5 37
7 51 5 42
7 58 5 46 | 7 46 5 36 |
| 17 | 7 53 5 45 | 7 52 5 43 | 7 47 5 37 7 51 5 42 | 7 50 5 41 |
| 10 | | 7 52 5 43 7 56 5 47 | 7 51 5 42 7 58 5 46 | 7 54 5 46 |
| 19 | 7 57 5 49 | 7 56 5 47 8 0 5 51 | 7 59 5 50 | 7 58 5 50 |
| 21 | 8 5 5 55 | | | |
| 22 | 8 5 5 55
8 9 5 58 | 8 4 5 54
8 8 5 56
8 12 5 58
8 16 5 59
8 20 6 0 | | 8 2 5 53
8 6 5 56
8 10 5 58
8 14 6 0 |
| 23 | 8 13 5 59 | 8 12 5 58 | 8 7 5 56 8 11 5 57 | 8 10 2 28 |
| 24 | 8 17 6 1 | 8 16 5 59 | 8 15 5 58
8 19 6 0 | 8 14 6 0 |
| 25 | 8 21 6 1 | 8 20 6 Q | | 8 18 6 1 |
| 26 | 8 25 6 1 | 8 24 6 0 | 8 23 6 1 | |
| | 8 29 6 1 | 8 28 6 0 | 8 27 6 1 | |
| 27 | 8 33 5 59
8 37 5 58 | 8 32 5 59
8 36 5 58 | 8 31 6 1 | |
| 29 | 8 37 5 58 | 8 36 5 58 | 8 35 6 0 | 8 34 6 1
8 38 5 59 |
| 30 | | 8 40 5 55 | 8 39 5 57 | |
| 31 | 8 45 5 52 | 8 44 5 53 | 8 43 5 54 | 8 42 5 56 |
| - | I was a second to the | 1 | 1 1 | Second 1 |

Degrees.

| | | | | | | | _ | | UST | | - | | | | | |
|----------|------|----|-----|------|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|
| | Lea | | Yea | r. | F | rit | Yea | | Sec | ond | | | | | Ye | |
| | 1776 | 5 | 17 | 80 | 177 | 3 | 17 | 77 | 177 | 4 | 17 | 78 | 177 | 75 | 17 | 79 |
| | 1784 | • | | 88 | 178 | - | - | 85 | 178 | | | 86 | 178 | 33 | 17 | 87 |
| 73 | Sun' | S | Ck | ck | Sui | 1's | Clo | ck | Sur | 1's | Clo | ck | | | Clo | ock |
| H | RtA | f- | bef | ore | Rt | Af- | bef | ore | Rt | | bef | | Rt | Af- | bef | or |
| č | cen. | in | | ne | cen | | th | | cen | .in | th | | cen | | th | |
| gre | Tim | ie | Su | n. | Ti | me | Su | n. | Tir | me | Su | n. | Ti | me | Su | n. |
| Degrees. | h | 1 | 1 | // | h | 1 | , | 11 | h | 1 | 1 | 11 | h | 1 | 1 | " |
| - | 8 4 | 18 | 5 | 49 | 8 | 48 | 5 | 50 | 8 | 46 | 5 | 51 | 8 | 46 | 5 | 5 |
| 2 | 8 | 52 | 5 | 44 | 8 | 51 | 5 | 46 | 8 | 50 | 5 | 48 | 8 | 59 | 5 | 5 |
| 3 | 8 | 56 | 5 | 40 | 8 | 55 | 5 | 41 | 8 | 54 | 5 | 43 | 8 | 53 | 5 | 4 |
| 4 | 9 | 0 | 5 | 34 | 8 | 59 | 5 | 36 | 8 | 58 | 5 | 38 | 8 | 57 | 5 | 4 |
| | 9 | 4 | 5 | 28 | 9 | 3 | 5 | 31 | 9 | 2 | 5 | 33 | 9 | 1 | 5 | 3 |
| 5 | 9. | 8 | 5 | 22 | 9 | 7 | 5 | 25 | 9 | 6 | 5. | 27 | 9 | 5 | 5 | 2 |
| | 9 | 12 | 5 | 15 | 9 | 11 | 5 | 18 | 9 | 10 | 5 | 20 | 9 | 9 | 5 | 2: |
| 7 8 | | 15 | 5 | 7 | 9 | 14 | | 10 | 9 | 13 | 5 | 12 | 9 | 12 | 5 | 1 |
| 9 | 9 | 19 | 4 | 59 | 9 | 18 | | 2 | 9 | 17 | 5 | 5 | 9 | 16 | 5 | |
| 10 | | 23 | 4 | 50 | 9 | 22 | 4 | 53 | 9 | 21 | 4 | 46 | 9 | 20 | 4 | 5 |
| 11 | 9 : | 27 | 4 | 41 | 9 | 26 | 4 | 44 | 9 | 25 | 4 | 47 | 9 | 24 | 4 | 4 |
| 12 | | 31 | 4 | 31 | 9 | 30 | 4 | 34 | 9 | 29 | 4 | 37 | 9 | 28 | 4 | 4 |
| 13 | | 34 | 4 | 21 | 9 | 33 | | 24 | 9 | 32 | 4 | 27 | 9 | 31 | 4 | 3 |
| 14 | 9 | 38 | 4 | 10 | 9 | 37 | | 13 | 9 | 36 | 4 | 16 | 9 | 35 | 4 | 1 |
| 15 | | 42 | 3 | 59 | 9 | 41 | 4 | 1 | 9 | 40 | 4 | 4 | 9 | 39 | 4 | |
| 16 | | 46 | 3 | 47 | 9 | 45 | _ | 49 | 9 | 44 | 4 | 53 | 9 | 43 | _ | 5 |
| | | 49 | 3 | 34 | 9 | 48 | 3 | 37 | 9 | 47 | 3 | 41 | 9 | 46 | 3 | 4 |
| 17 | | 53 | 3 | 21 | 9 | 52 | 13 | 24 | 9 | 51 | 3 | 28 | 9 | 50 | 3 | 3 |
| 19 | | 57 | 3 | 7 | 9 | 56 | 3 | 10 | 9 | 55 | 3 | 14 | 9 | 54 | 3 | I |
| 20 | 10 | 0 | 2 | 53 | 10 | 0 | | 56 | 9 | 59 | 3 | 0 | 9 | 58 | 3 | |
| 21 | 10 | 4 | 2 | 39 | 10 | 3 | 2 | 42 | 10 | 2 | 2 | 46 | 10 | 1 | 2 | 5 |
| 22 | 10 | 48 | 2 | 24 | 10 | 6 | 2 | 27 | 10 | 6 | 2 | 31 | 10 | 5 | | 3 |
| 23 | 10 | 12 | ź | 9 | 10 | 11 | 2 | 11 | 10 | 10 | 2 | 15 | 10 | 9 | 2 | 2 |
| 24 | | | 1 | 53 | 10 | 14 | | 56 | 10 | 13 | 2 | 0 | 10 | 12 | 2 | |
| 25 | 10 | 15 | 1 | 36 | 10 | 18 | 1 | 40 | 10 | 17 | 1 | 45 | 10 | 16 | 1 | 5 |
| 26 | 10 | 23 | 1 | 20 | 10 | 22 | ī | 23 | 10 | 21 | I | 28 | 10 | 20 | I | 3 |
| 27 | | 26 | 1 | 3 | 10 | 25 | | 6 | 10 | 24 | 1 | 11 | 10 | 23 | | 1 |
| 28 | | 30 | 0 | 45 | 10 | 29 | | 49 | 10 | 28 | 0 | 54 | 10 | 27 | | |
| 29 | 10 | 33 | 0 | 27 | 10 | 33 | | 32 | 10 | 32 | 0 | 37 | 10 | 31 | | 4 |
| 30 | 10 | 37 | 0 | 9 | 10 | 36 | 0 | 14 | 10 | 35 | 0 | 19 | 10 | 34 | | 2 |
| 31 | | 41 | oa | ft.9 | 10 | 40 | oa | | 10 | 39 | 0 | 2 | 10 | 38 | | |

262 Right Ascension and Equation of Time.

| - | SEPTEMBER. | | | | | | | | | | | | |
|----------|-------------------------------|------------|-----------------|-----------|----------------|-------------|----------------|-------|--|--|--|--|--|
| 017. | Leap Y | | First | Year. | Second | Year. | Third | Year | | | | | |
| 779 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 | | | | | |
| 12 | | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 178 | | | | | |
| 200 | R. R. C. C. T. E. E. E. C. C. | lock | | Clock | Sun's | | Sun's | Clock | | | | | |
| De. | | fter | RtAf-
cen.in | after | RtAf- | after | RtA1- | after | | | | | |
| 20 | Time S | un. | Time | Sun. | cen.in
Time | the
Sun. | Cen.in
Time | the | | | | | |
| Degrees. | h / | Validation | h / | 1 # | h / | 7 # | h / | Sun. | | | | | |
| _ | | | | | - | | - | - " | | | | | |
| 2 | - TSJ 24 - 1Q 1 3 | 28 | 10 44 | 0 22 | 10 42 | 0 17 | 10 42 | 0 12 | | | | | |
| 3 | 100 100 1 | 6 | 10 47 | 0 42 | 10 46 | 0 36 | 10 45 | 0 30 | | | | | |
| 4 | 10.0 | 26 | 10 54 | 1 20 | 10 53 | 1 14 | 10 49 | O 49 | | | | | |
| 5.5 | 4 4 5 6 6 7 | 1.45 | 10 58 | 1 40 | 10 57 | 1 35 | 10 56 | 1 29 | | | | | |
| 6 | 11 2 | 25 | 11 2 | 1.59 | 11 1 | 1 54 | 11 0 | 1 45 | | | | | |
| 7 | | 2 25 | IL 5 | 2 19 | 11 4 | 2 14 | 11 3 | 2 9 | | | | | |
| . 8 | 50 7 57 1 | 2 45 | 11 9 | 2 40 | 11 8 | 2 35 | 11. 7 | 2. 29 | | | | | |
| 9 | | 3 6 | 11 12 | 30 | 1 11 | 2 54 | 11, 11 | 2 49 | | | | | |
| 10 | - | 3 26 | 11 16 | 3 21, | 11 15 | 3 15 | 11 14 | 3 10 | | | | | |
| 1.1 | District Annual Land | 4 8 | 11 20 | 3 41 | 11 19 | 3 35 | 11 18 | 3 30 | | | | | |
| 13 | 1000 000 | 4 8 | 11 23 | 4 2 4 23 | 11 22 | 3 56 | 11 21 | 3 51 | | | | | |
| 14 | 12 808 - 12 6 7 | 49 | 11 30 | 4 23 | LI 29 | 4 18 | 11 25 | 4 12 | | | | | |
| 15 | | 10 | 11 34 | 51 5 | 11 33 | 4 59 | 11 32 | 4 54 | | | | | |
| 16 | | 31 | 11 38 | 5 26 | 11 37 | 5 20 | 11 36 | 5 15 | | | | | |
| 17 | 11 42 5 | | 11 41 | 5 47 | 11 40 | 5 41 | 11 39 | 5 36 | | | | | |
| 18 | 11 46 6 | 13 | 11 45 | 0 | 11 44 | 6 3 | 11 43 | 5 57 | | | | | |
| 19 | 11 49 6 | | 11 48 | 6 29 | 14 47 | 6 23 | 11 47 | 6 18 | | | | | |
| 20 | 11 53 6 | 22 | 11 52 | 6 50 | 11 51 | 6 45 | 11 50 | 6 39 | | | | | |
| 21 | | 15 | 11 56 | 7 11 | 11 55 | 7 5 7 26 | 11 54 | 7 0 | | | | | |
| 22 | 12 09 7 | | 11 59 | 7 32 | 11 58 | 7 26 | 11 57 | 7 20 | | | | | |
| 23 | 12 4 7 | 57 | 12 6 | 7 52 8 13 | 12 2 | 7 46 | 12 1 | 7 41 | | | | | |
| 25 | 12 11 8 | | 12 10 | 8, 33 | 12 5 | 7 7 8 28 | 12 5 | 8 22 | | | | | |
| 26 | 12 14 8 | | 12 14 | 8 53 | 12 13 | 8 47 | 12 12 | 8 42 | | | | | |
| 27 | 12 18 9 | 18 | 12 17 | 9 13 | 12 16 | 9 7 | 12 15 | 9 1 | | | | | |
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| 29 | 12 25 9 | 57 | 12 24 | 9 52 | 12 23 | 9 47 | 12 23 | 9 41 | | | | | |
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| 0 | 88 01 3 | 0 | 97 01 | 1.Jine | 04 04 | 0.325 | 10 41 | | | | | | |

| 1 | | | 2.7 | OCT | OBER. | | | |
|----------|--------------------|-------|--------|--|--------|-------|--------|-------|
| | Leap | | First | Year. | Second | Year. | Thura | Year. |
| | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| | Description of the | Clock | | Clock | | Clock | Sun's | Clock |
| D | RtAf- | after | RtAf- | after | RtAf- | after | RtAf- | after |
| eg | cen.in | the | cen.in | the | cen.in | the | cen.in | the |
| Degrees. | Time | Sun. | Time | Sun. | Time | Sun. | Time | Sun. |
| | h / | 1 11 | h / | 1 11 | h / | 1 11 | h / | 1 11 |
| 1 | 12 33 | 10 35 | 12 32 | | 12 31 | 10 25 | 12 30 | 10 20 |
| 2 | 12 36 | 10 54 | 12 35 | | 12 34 | | 12 33 | 10 39 |
| 13 | 12 40 | 11 12 | 12 39 | | | 11 1 | 12 37 | 10 57 |
| 4 | 12 43 | 11 30 | 12 43 | | 12 42 | | 12 41 | 11 15 |
| 5 | 12 47 | 11 47 | 12 46 | 11 42 | 12 45 | 11 37 | 12 44 | 11 33 |
| 6 | 12 51 | 12 4 | 12 50 | 11 59 | 12 49 | 11 55 | 12 48 | 11 51 |
| 17 | 12 54 | 12 21 | 12 54 | | 12 52 | | 12 52 | 12 8 |
| 8 | 12 58 | 12 37 | 12 57 | 12 32 | 12 56 | | 12 55 | 12 24 |
| 9 | 13 2 | 12 53 | 13 1 | 12 45 | 13 0 | | 12 59 | 12 40 |
| 10 | 13 5 | 13 8 | 13 5 | 13 4 | 13 4 | 13 0 | 13 3 | 12 56 |
| 11 | 13 9 | 13 23 | 13 8 | 13 19 | 13 7 | 13 15 | 13 6 | 13 12 |
| 12 | 13 13 | 13 37 | 13 12 | 1 | 13 11 | | 13 10 | 13 27 |
| 13 | 13 17 | 13 51 | 13 14 | | 13 15 | | 13 14 | 13 42 |
| 14 | 13 20 | 14 4 | 13 19 | | 1 - | 13 58 | 13 17 | 13 50 |
| 15 | 13 24 | 14 17 | 13.23 | | 13 22 | | 13 21 | 14 9 |
| 16 | 13 28 | 14 29 | 13 27 | 14 26 | 13 26 | | 13 25 | 14 21 |
| 17 | 13 32 | 14 40 | 13 31 | 14 38 | 13 30 | 14 36 | 13 29 | 14 33 |
| 18 | 13 35 | 14 51 | 13 34 | | 13 33 | | 13 32 | 14 44 |
| 19 | 13 39 | 15 2 | | 14 59 | 13 37 | | | 14 55 |
| 20 | 13 43 | 15 12 | 13 42 | - | | 15 8 | 13 40 | 15 5 |
| | 13 47 | 15 21 | | 15 19 | 13 45 | | 13 44 | 15 15 |
| 22 | | 15 29 | 13 49 | 15 28 | | 15 26 | 13 48 | |
| 23 | 13 54 | 15 37 | 13 53 | A CONTRACTOR OF THE PARTY OF TH | 13 52 | | 13 51 | |
| 24 | 13 58 | | 13 56 | | 13 56 | | 13 55 | 15 40 |
| 25 | 14 2 | 15 50 | 13 1 | - | 14 0 | - | 13 59 | 15 47 |
| 26 | 14 6 | 15 56 | 14 5 | | 14 4 | | 14 3 | 15 52 |
| 27 | | 16 0 | 14 9 | | | 15 58 | 14 7 | 15 57 |
| | 14 13 | 16 5 | 14 13 | | | 16 3 | 14 11 | 16 2 |
| 29 | 14 17 | 16 8 | 14 16 | | | 16 6 | 14 14 | 16 6 |
| 30 | | 16 11 | | 16 10 | | 16 10 | 14 18 | |
| 31 | 14 25 | 16 13 | 14 24 | 16 12 | 14 23 | 16 12 | 14 22 | 16 12 |

264 Right-Ascension and Equation of Time:

| rees. 1 2 3 | 1776 | Sun. | 1773 | the Sun. | Second Year. 1774 1778 1782 1786 Sun's Clock RtAf- after cen.in the Time Sun. | 1775 1779
1783 1787
Sun's Clock
RtAf-
cen.in the
Time Sun. |
|---------------|---|-------------------------------|----------------------------------|-------------------------------|---|---|
| 1 2 3 | 1784
Sun's
RtAf-
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h /
14 29
14 33 | Clock after the Sun. | Sun's
RtAf-
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Time | Clock after the Sun. | Sun's Clock
RtAf-
cen.in the
Time Sun. | 1775 1779
1783 1787
Sun's Clock
RtAf-
cen.in the
Time Sun. |
| 1 2 3 | Sun's
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Sun. | Sun's
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Time | Clock
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Sun. | Sun's Clock
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Time Sun. | Sun's Clock
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| 3 | 14 33 | | 14 20 | 11-6 1 | | 1 |
| 3 | | | 14 32 | | 14 27 16 13 | 1 |
| | | 16 13 | 14 36 | 16 12 | 14 31 16 14 | 1. " |
| | 14 41 | 16 12 | 14 38 | 16 11 | 14 39 16 12 | |
| 71 | 14 45 | 16 9 | 14. 44 | | 14 43 16 10 | |
| | 14 49 | 16 6 | | 16 6 | 14 47 16 7 | 14 46 16 8 |
| | 14 53 | 16 2 | 14 52 | 16 2 | 14 51 16 4 | |
| | 14 57 | 15 57 | | 15 57 | 14 55 16 0 | 14 54 16 1 |
| 7 | 15 1 | 15 51 | 15 0 | 1 1 | 14 59 15 54 | |
| | 15 5 | 15 44 | 15 4 | | 15 3 15 48 | |
| | | 15 37 | 15 8 | 1 2 0 | 15 7 15 41 | 15 6 15 44 |
| | 15 13 | | 15 12 | 15 30 | 15 11 15 33 | 15 10 15 36 |
| - 3 | | 15 9 | | 15 12 | 15 15 15 26 | 15 14 15 27
15 18 15 18 |
| | 15 26 | | 15 24 | | 15 23 15 4 | 1-3 |
| -) | 15 30 | | 15 29 | | 15 28 14 53 | 15 27 14 56 |
| | 15 34 | | 15 33 | | 15 32 14 42 | |
| | 15 38 | | 15 37 | | 15 36 14 28 | |
| | 15 42 | | 15 41 | 14 11 | 15 40 14 15 | 15 39 14 18 |
| | 15 46 | _ | 15 45 | 13 56 | 15 44 14 0 | 15 43 14 4 |
| | | 13 36 | 15 49 | | 15 48 13 44 | 15 47 13 49 |
| | | 13 20 | 15 54 | | 15 53 13 28 | 1 - 3 3 3 3 3 1 |
| | 2 1 | 13 3
12 45 | 20 | 13 . 7 | 15 57 13 11 | 15 56 13 16 |
| -4 | - 0 | 12 26 | | 12 49 | | |
| -) . | 16 12 | | | | | |
| 20 | 16 16 | | 1000 | 11 51 | 16 10 12 16 | |
| | 16 21 | 0 3 T M C | | 11 30 | 16 18 11 35 | 16 17 11 41 |
| | 16 25 | | | 11 8 | 16 22 11 13 | |
| | | 10 41 | | 10 46 | 16 27 11 52 | 1 4 0 |

| | 5 6 6 7 1 1 1 | | | PECE | MBER. | 1 | | |
|----------|---------------|-------|--------|---------|----------------|--------------|--------|-------|
| | Leap | Year. | Firft | Year. | Second | Year. | Third | Year. |
| 1 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 1 | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| | Sun's | Clock | Sun's | Clock | Sun's I | Clock | Sun's | Clock |
| _ | RtAf- | after | RtAf- | after | RtAf- | after | RtAf- | after |
| 25 | cen.in | the | cen.in | the | cen.in | the | cen.in | |
| 275 | Time | Sun. | Time | Sun. | Time | Sun. | Time | Sun. |
| Degrees. | h / | 1 11 | h ' | 1 .11 | h / | 1 11 | h / | 1 11 |
| 1 | 16 33 | 10 18 | 16 32 | 10 23 | 16 31 | 10 29 | 16 30 | 10 36 |
| 2 | 16 38 | 9 55 | 16 37 | 9 59 | 16 35 | 10 5 | 16 34 | 10 12 |
| 3 | 16 42 | 9 30 | 16 41 | 9 35 | 16 40 | 9 42 | 16 39 | 9 49 |
| 4 | 16 46 | 9 6 | 16 45 | 9 10 | 16 44 | 9 17 | 16 43 | 9 24 |
| | 16 51 | 8 40 | 16 50 | 8 45 | 16 48 | 8 52 | 16 47. | 9 9 |
| 5 | 16 55 | 8 14 | 16 54 | 8 19 | 16 53 | 8 26 | 16 52 | 8 34 |
| 7 | 16 59 | 7 48 | 16 58 | 7 52 | 16 57 | 8 1 | 16 56 | 8 9 |
| 8 | 17 4 | 7 21 | 17 3 | 7 26 | 17 2 | 7 34 | 17 1 | 7 42 |
| 9 | 17 8 | 6 53 | 17 7 | 6 59 | 17 6 | 7 7 | 17 5 | 7 19 |
| 10 | 17 13 | 6 25 | 17 12 | 6 32 | 17 10 | 6 39 | 17 9 | 6 47 |
| 1 | 17 17 | 5 57 | 17 16 | - | - | 6 11 | 17 14 | 6 19 |
| 2 | 17 22 | 5 29 | 17 20 | 5 36 | 17 15 | 5.43 | 17 18 | 5 51 |
| 13 | 17 26 | 5 0 | 17 25 | 5 7 | 17 24 | 5 14 | 17 23 | 5 22 |
| 14 | 17 30 | 4 31 | 17 29 | 4 38 | 17 28 | 4 46 | 17 25 | # 54 |
| 15 | 17 35 | 4 2 | 17 34 | 4 9 | 17 32 | 4 17. | 17 31 | 4 25 |
| 16 | _ | 3 32 | | _ | - | | 17 36 | 3 55 |
| 17 | | 3 2 | 17 38 | 3 40 | 17 37
17 41 | 3 47
3 28 | 17 40 | 3 26 |
| 18 | 17 44 | 2 33 | 17 47 | 2 41 | 17 41 | 3 49 | 17 45 | 2 56 |
| 19 | 17 53 | 2 3 | 17 51 | 2 11 | 17 50 | 2 19 | 17 49 | 2 27 |
| 20 | 17.57 | 1 33 | 17 56 | 1 41 | 17.55 | 1 48 | 17 54 | 1 57 |
| 21 | 18 1 | 1 3 | 18 0 | 1 10 | 17 59 | i 18 | 17 58 | 1 26 |
| 22 | 18 6 | 0 33 | 18 5 | 0 40 | 18 4 | 0 48 | | 0 56 |
| 23 | 18 10 | 0 3 | 18 9 | 0 10 | 18 8 | 0 18 | 18 3 | 0 26 |
| 24 | 18 15 | ob.27 | 18 14 | 0 b. 20 | 18 12 | ob.12 | 18 11 | ob. 4 |
| 15 | 18 19 | 0 57 | 18 18 | 0.50 | 18 17 | 0 42 | 18 16 | 0 34 |
| 26 | 18 24 | 1 57 | 18 23 | 1 20 | 18 21 | 1 12 | 18 20 | 1 4 |
| 27 | 18 28 | 1 56 | 18 20 | 1 50 | 18 26 | 1 42 | 18 25 | 1 34 |
| 28 | 18 33 | 2 26 | 18 31 | 2 19 | 18 30 | 2 11 | 18 29 | 2 3 |
| 29 | 18 37 | 2 55 | 18 36 | 2 49 | 18 35 | 2 41 | 18 34 | 2 33 |
| 30 | 18 41 | 3 24 | 18 40 | 3 18 | 18 39 | 3 10 | 18 38 | 3 2 |
| 31 | 18 46 | 3 52 | 18 45 | 3 47 | 18 44 | 3 39 | 18 42 | 3 31 |
| | The co | | | | 1 2 | 131 | 13 03 | 11 13 |

| 1 | | and the second second second second second | Sun's Place a | _ connat |
|-------|---------------|--|--------------------------|------------------------|
| - | Leap Year. | First Year. | Second Year | Third Year |
| 1 | 1776 1780 | 1773 1777 | 1774 1778 | 1775- 177 |
| | 1784 1788 | 1781 _ 1785 | 1782 1786 | 1783 . 178 |
| 1 | Sun's Sun's | Sun's Sun's | Sun's Sun's | Sun's [Sun's |
| Days. | Place. Dec. | Place. Dec. | Place. Dec. | Place. Dec. |
| 15. | 0 .1 0 . 1 | 0 1 0 1 | 0 1 0 1 | 0 / 0 / |
| - | bf South | by South | by South | South |
| 1 | 10 46 23 2 | 11 33 22 58 | 11 16 23 0 | 11 123 |
| 2 | 11 48 22 57 | 12 34 22 52 | 12 17 22 54 | 12 2 22 5 |
| 3 | 12 49 22 51 | 13 35 22 46 | 13 19 22 48 | 13 4 22 50 |
| 4 | 13 5 22 45 | 14 36 22 40 | 14 20 22 42 | 14 5 22 4 |
| 5 | 14 51 22 38 | 15 37 22 33 | 15 21 22 35 | 15 6 22 3 |
| 6 | 15 52 22 31 | 16 39 22 26 | 16 22 22 28 | 16 7 22 30 |
| 7 | 16 53 22 24 | 17 40 22 18 | 17 23 22 20 | 17 8 22 2 |
| 8 | 17 54 22 16 | 18 41 22 10 | 18 24 22 12 | 18 10 22 1 |
| 9 | 18 56 22 8 | 19 42 22 1 | 19 26 22 4 | 19 11 22 |
| 10 | 19 57 21 59 | 20 43 21 52 | 20 27 21 55 | 20 12 21 5 |
| 11 | 20 58 21 50 | 21 44 21 43 | 21 28 21 45 | 21 13 21 4 |
| 12 | 21 5921 40 | 22 46 21 33 | 22 29 21 35 | 22 14 21 3 |
| 13 | 23 021,30 | 23 47 21 22 | 23 30 21 25 | 23 15 21 2 |
| 14 | 24 1 21 20 | 24 48 21 12 | 24 31 21 15 | 24 16 21 1 |
| 15 | 25 2 21 9 | 7 | 25 32 21 4 | 25 17 21 |
| 16 | 26 420 58 | 26 56 20 49 | 20 33 20 52 | 26 18 20 5 |
| 17 | 27 5 20 46 | 27 51 20 37 | 27 34 20 41 | 27 19 20 4 |
| 3 | 1 1 1 1 1 1 1 | 28 52 20 25 | 28 36 20 29 | 28 21 20 3 |
| 20 | | 200 | 29 37 20 16
= 38 20 2 | 29 22 20 1
== 23 20 |
| - | | | | - |
| 21 | 2 10 10 42 | 1 55 19 46 | 1 39 19 49 | 1 24 19 5 |
| 23 | 3 11 19 28 | 3 57 19 18 | 2 40 19 35 | 2 25 19 3 |
| 24 | 4 12 19 14 | 4 58 19 3 | 4 42 19 7 | 4 27 19 1 |
| 25 | 5 13 18 59 | 5 59 18 48 | 5 43 18 52 | 5 28 18 5 |
| 26 | 6 14 18 44 | | | 7 |
| 27 | 7 15 18 29 | 7 0 18 33
8 1 18 17 | 7 45 18 22 | 7 30 18 2 |
| 28 | 8 16 18 13 | 9 2 18 1 | 8 45 18 6 | 8 30 18 1 |
| 29 | 9 17 17 57 | 10 3 17 45 | 9 40 17 50 | 9 31 17 5 |
| 30 | 10 18 17 41 | 11 417 29 | 10 47 17 34 | 10 32 17 3 |
| 31 | 11 19 17 24 | 12 5 17 12 | 11 48 17 17 | 11 33 17 2 |

| 1 | Leap | | _ | | _ | Tea | Da | Sec | _ | _ | | Third | | ar, |
|-------|--------|-----|----|------|----|-----|-----|-----|-----|-----|-------|-------|------|-----|
| - | 1776 | 178 | 30 | 177 | | 17 | 77 | 177 | 4 | 177 | 78 | 1775 | 17 | 779 |
| 91 | 1784 | 175 | 38 | 178 | 1 | 17 | 85 | 178 | 2 | 17 | 86 | 1783 | 17 | 87 |
| oil | The | Th | | Th | | T | ne | | ne | | ie al | The | T | he |
| | Sun's | Sun | 3 | Sun | | Sun | | Sun | 's | Sur | a's | Sun's | | - |
| Days. | Place. | De | c. | Plac | | De | | Pla | | Dec | c. | Place | . De | |
| V | 0 / | 0 | 7 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 7 | 0 1 | 0 | 1 |
| | - | Sou | th | - | - | Sou | th | | = | Sou | th | - | Soi | uth |
| 1 | 12 19 | 17 | 8 | 13 | | 16 | 54 | 12 | | | 0 | 12 3 | 117 | 1 3 |
| 2 | 13 20 | 16 | 50 | 14 | 6 | 16 | 37 | 13 | | | 42 | 13 3 | 5/16 | 46 |
| 3 | | 01 | 33 | 15 | 7 | r6 | 19 | 14 | 51 | 16 | 24 | | 6 16 | |
| 4 | 3 | 1 | 15 | 16 | 8 | 16 | 111 | 15 | 51 | 16 | 6 | 15 3 | | 100 |
| 5 | 16 23 | 15 | 57 | 17 | 9 | 15 | 43 | 16 | - | _ | 48 | 16 3 | _ | - |
| 6 | 17 23 | | 39 | 18 | 9 | 15 | 24 | 17 | 53 | | 30 | | 415 | |
| 7 | | | 20 | 19 | 10 | | 5 | 18 | 54 | | 11 | | 9 15 | |
| 8 | | 15 | 1 | 20 | | 14 | | 19 | 54 | | 52 | 19 4 | | _ |
| 9 | | | 42 | 21 | | 14 | 27 | 20 | | 14 | 33 | 20 4 | | |
| 10 | | 14 | 23 | _ | 12 | - | _ | - | _ | 14 | 13 | | 1 14 | _ |
| 11 | 22 27 | | 3 | 23 | - | 13 | 48 | 22 | | 13 | 54 | | 1 3 | |
| 12 | 23 27 | | 43 | 24 | | 13 | 28 | 23 | 57 | | 34 | | 2 13 | |
| 13 | | 13 | 23 | 25 | | 13 | 47 | 24 | 57 | 13 | 54 | | 3 12 | |
| 14 | 1 3 | 13 | 42 | 27 | | 12 | 26 | 26 | | | 33 | | 3 12 | |
| 15 | | - | - | 28 | 15 | _ | 6 | - | _ | - | 12 | - | 4 12 | - |
| 16 | | 12 | 1 | 29 | | 11 | 45 | 27 | 59 | 11 | 51 | | 4 11 | |
| 17 | | 11 | 40 | X | | lii | | | 59 | | 30 | | 5 11 | |
| 19 | 1 2 0 | 11 | 18 | 1 | 17 | | 2 | | 1.0 | | 8 | | 5 11 | |
| 20 | | 10 | 57 | 2 | 17 | | 41 | 2 | | 1 | 47 | | 610 | |
| 21 | - | 10 | 35 | 3 | 17 | - | 19 | 3 | 1 | 10 | 25 | - | 610 | 1 |
| 22 | 3 32 | | 14 | 4 | 18 | | | 4 | | | 3 | | 610 | 0 |
| 23 | | | 52 | 5 | 18 | | | 5 | 1 | 9 | 41 | | 2011 | 9 4 |
| 24 | 1 | | 30 | 6 | 18 | | | , 6 | | 1 / | 19 | | | 9 2 |
| 25 | | | 7 | 7 | 18 | 8 | 50 | 7 | - 2 | - | 56 | 6 4 | | 9 |
| 26 | - | | 45 | 8 | 18 | | | 8 | 1 2 | 8 | 34 | | | 8 4 |
| 27 | 1 | 1 | 22 | 9 | 19 | 8 | 5 | 1 9 | 2 | | 12 | | 17 | 8 1 |
| 28 | | | 0 | 10 | 19 | 7 | 43 | 10 | 1 | 7 | 49 | 94 | 18 | 7 5 |
| 29 | | | 37 | 1 | | 1 | - 4 | 1 | | 1 | 1 | 150 | 1 | |
| 1 | 1 1-1 | 1 | 13 | | | 1 | 11 | 1 | | 1 | | 1 | 1 | |

| T | 1 | | MA | RCH | hath 31 | Days. | A Million | |
|-------|-----------|----------|--------|----------|---------|-----------|-----------|-----------|
| 5 | Leap | Year, | | Year. | | d Year. | Third | Year |
| 1 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| : | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| | The | The | The | | The | | The | |
| Da | Sun's | San's | Sun's | | Sun's | | Sun's | Sun's |
| Days. | Place | Dec. | Place. | | Place. | Dec. | Place. | Dec. |
| 7 | 0.1 | 0 / | 0 / | 0 / | 0 / | 0 / | 0 / | 0 1 |
| 0.7 | - * | South | × | South | × | South | × | South |
| 1 | | 7 14 | 11 19 | 7 20 | 11 3 | 7 27 | 10 48 | 7 32 |
| 2 | | 6 51 | 12 20 | 6 57 | 12: 3 | 7 4 6 41 | 11 48 | 7 9 |
| 3 | 13 34 | 6 28 | 13 20 | 6 34 | 13 3 | | 12 48 | 6 46 |
| 4 | 14 34 | 6 5 | 14 20 | 6 11 | 14 3 | 6 18 | 13 48 | 6 23 |
| 5 | 15 33 | 5 42 | 15 20 | 5 48 | 15 3 | 5 55 | 14 48 | 5 50 |
| 6 | 16 33 | 5 19 | 16 20 | 5 24 | 16 3 | 5 32 | 15 48 | 5 36 |
| 7 | 17 33 | 4 55 | 17 19 | 5 1 4 38 | 17 3 | 5 9 | 16 48 | 5 13 |
| 8 | 18 33 | 4 32 | | | 3 | 4 45 | 17 48 | 4 50 |
| 9 | 20 33 | 4 9 3 45 | 19 19 | 3 51 | 19 2 | 4 22 3 58 | 1 | 4 26 |
| - | 21 33 | 3 21 | | - | 21 2 | _ | 19 47 | 4 3 |
| 11 | 22 32 | 2 58 | 21 10 | 3 27 3 | 22 1 | 3 34 | 20 47 | 3 39 |
| 12 | 23 32 | 2 34 | 23 18 | 2 40 | 23 1 | 3 11 2 47 | 21 47 | 3 16 |
| 14 | 24 32 | 2 11 | 24 18 | 2 16 | 24 1 | 2 23 | 23 46 | 2 52 2 29 |
| 15 | 25 31 | 1 47 | 25 17 | 2 53 | 25 1 | 1 59 | 24 46 | 2 5 |
| 16 | 26 31 | 1 23 | 26 17 | 1 29 | 26 0 | 1 36 | 25 40 | 1.41 |
| 17 | 27 31 | 1 0 | 27 16 | 1 5 | 27 0 | 1 13 | 26 45 | 1 18 |
| 18 | 28 30 | 0 35 | 28 16 | 0 41 | 28 0 | 0 49 | 27 45 | 0 54 |
| 19 | 29 30 | 0 12 | 29 15 | 0 18 | 28 59 | 0 25 | 28 44 | 0 30 |
| 20 | W 29 | N12 | Y 15 | N. 6 | 29 59 | 0 1 | 29 44 | 0 7 |
| 21 | 1 29 | 0 35 | 1 14 | 0 30 | | N. 22 | P 43 | N. 17 |
| 22 | 2 28 | 0 59 | 2 14 | 0 53 | 1 58 | 0 46 | 1 43 | 0 41 |
| 23 | 3 27 | 1 23 | 3 13 | 1 17 | 2 57 | 1 10 | 2 42 | 1 4 |
| 24 | 4 27 | 1 46 | 4 12 | 1 40 | 3 56 | 1 33 | 3 41 | 1 28 |
| 25 | 5 26 | 2 17 | 5 12 | 2 4 | 4 56 | 1 56 | 4 41 | 1 52 |
| 26 | 6 25 | 2 33 | 6 11 | 2 27 | 5 55 | 2 20 | 5 40 | 2 15 |
| 27 | 7 24 8 24 | 2 57 | 7 10 | 2.51 | 6 54 | 2 44 | 6 39 | 2 39 |
| | 9 23 | 3 20 | | 3 14 | 7 53 | 3 7 | 7 38 8 38 | 3 2 |
| 9 | 10 22 | 3 43 4 7 | 9 8 | 3 38 | 8 52 | 3 30 | 2 | 2 |
| 31 | 11 21 | 4 30 | 11 6 | 4 24 | 9 51 | 3 54 4 17 | 9 37 | 3 49 |
| | | | | 7 -4 | | + ./ | .0 30 | 4 |

| 1 | | | | | th 30 D | | | |
|-------|--------|-----------|--------------|----------|---------|-----------|--------|----------|
| | | Year. | First | | | Year. | Third | |
| 1 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 178 |
| 7 | The | The | The | The | The | The | The | The |
| 빙 | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun' |
| Days: | Place. | Dec. | Place. | Dec. | Place. | Dec. | Place. | Dec. |
| 1 | 0 / | 0. 1 | 0 / | 0 1 | 0 / | 0 / | 0 / | 0 |
| | T | North | T | North | T | North | m | Nort |
| 1 | 12 20 | 4 53 | 12 6 | 4 47 | 11 50 | 4 39 | 11 34 | 4 3 |
| 2 | 13 19 | 5 16 | 13 5 | 5 10 | 12 49 | 5 3 | 12 34 | 4 5 |
| 3 | 14 18 | 5 39 | 14 4 | 5 33 | 13 48 | 5 26 | 13 33 | 5 2 |
| 4 | 15 17 | | 15 3
16 2 | 5 56 | 14 47 | 5 48 | 14 32 | 5 4 |
| 5 | _ | | - | | 15 46 | | 15 31 | |
| 6 | 17 15 | 0 47 | 17 1 | 6 41 | 16 45 | 6 33 | 16 30 | 6 3 |
| 7 8 | 18 13 | 7 9 | 18 6 | 7 4 7 26 | 17 44 | 6 57 7 18 | 17 29 | |
| | 20 11 | 7 32 7 54 | 19 57 | 7 49 | 18 42 | 7 41 | 19 26 | |
| 9 | 21 10 | 8 16 | 20 56 | 8 11 | 20 40 | 8 3 | 20 25 | 7 3 |
| -1 | - | 8 38 | 21 55 | 8 33 | _ | 8 25 | 21 24 | 8 2 |
| 11 | 22 9 | 9 0 | 22 53 | 8 55 | 21 39 | 8 47 | 22 23 | 8 4 |
| 13 | 24 6 | 9 28 | 23 52 | 9 16 | 23 36 | 9 9 | 23 21 | 9 |
| 14 | 25 5 | 9 43 | 24 51 | 9 38 | 24 35 | 9 31 | 24 20 | |
| 15 | 26 3 | 10 5 | 25 49 | 9 59 | 25 33 | 9 52 | 25 18 | 9 4 |
| 16 | | 10 26 | - | 10 21 | 26 32 | 10 13 | 26 17 | 10 1 |
| 17 | 28 0 | 19 47 | 27 46 | 10 42 | 27 31 | 10 34 | 27.16 | 19 3 |
| 18 | 28 59 | 11 8 | 28 45 | 11 2 | 28 29 | 10 55 | | 10 5 |
| 19 | 29 57 | 11 28 | 77 13 | 11 23 | 29 27 | 11 16 | 29 13 | Decree . |
| 20 | _ | 11 49 | 8 42 | 11 44 | 8 26 | 11 37 | _ | 11 3 |
| 21 | 3 .1 | 12 9 | 1 40 | | 1 24 | 11 57 | | 11 5 |
| 22 | | 12 29 | | 12 24 | 2 23 | 12 17 | | 12 1 |
| 23 | 9 7 | 12 49 | 3 37 | 12 44 | 3 21 | | - 11 | 12 3 |
| 24 | 4 49 | | 4 35 | 13 .4 | 4 19 | | | 12 5 |
| 5 | | | | 13 23 | - | 13 17 | | 13 1 |
| 26 | 6 46 | | | 13 43 | 6 16 | 13 37 | 6 50 | 13 3 |
| 7 8 | 7 44 | | 7 30 | | 7 14 | | | 13 5 |
| 29 | 9 40 | | | 14 39 | 9 11 | | 7 58 | 14 1 |
| 0 | 10 38 | | 10 24 | -01 | | 14 51 | 9 54 | |

| | | MAY hath | AY hath 31 Days. | | | | | |
|--------|-------------|-------------|------------------|-------------|--|--|--|--|
| . 18.3 | Leap Year. | First Year. | Second Year. | Third Year. | | | | |
| 951 | 1776 1780 | 1773 - 1777 | 1774 1778 | 1775 1779 | | | | |
| - 37 | 1784 - 1788 | 1781 1785 | 1782 1786 | 1783 1787 | | | | |
| od' | The The | The The | The The | The The | | | | |
| D | Sun's Sun's | Sun's Sun's | Sun's Sun's | Sun's Sun's | | | | |
| Days. | Place. Dec. | Place. Dec. | Place Dec. | Place. Dec. | | | | |
| | . 0 1 0 1 | 4 / 0 / | 0101 | 0 1 0 1 | | | | |
| 1 3 | 8. North | 8 North | 8 North | 8 North | | | | |
| -1 | 11 36 15 20 | 11 22 15 15 | 11 715 11 | 10 52 15 6 | | | | |
| 82 | 12 34 15 38 | 12 20 15 38 | 12 5 15 29 | 11 51 15 24 | | | | |
| :3 | 13 33 15 56 | 13 18 15 51 | 13 315 46 | 12 48 15 42 | | | | |
| 4 | 14 31 16 13 | 14 16 16 8 | 14 116 4 | 13 46 16 0 | | | | |
| 75 | 15 28 16 30 | 15 15 16 25 | 14 59 16 21 | 14 44 16 17 | | | | |
| 6 | 16 26 16 47 | 16 13 16 42 | 15 57 16 38 | 15 43 16 34 | | | | |
| 7 | 17 24 17 3 | 17 1416 59 | 16 55 16 55 | 16 40 16 51 | | | | |
| - 8 | 18 22 17 19 | 18 8 17 15 | 17 53 17 11 | 17 38 17 7 | | | | |
| .0 | 19 20 17 35 | 19 617 31 | 18 51 17 27 | 18 36 17 23 | | | | |
| 10 | 20 18 17 51 | 20 4 17 47 | 19 49 17 42 | 19 34 17 39 | | | | |
| 11 | 21 16 18 6 | 21 218 2 | 20 47 17 38 | 20 32 17 54 | | | | |
| 12 | 22 14 18 21 | 22 0 18 17 | 21 44 18 13 | 21 30 18 10 | | | | |
| 23 | 23 12 18 36 | 22 58 18 32 | 22 42 18 28 | 22 28 18 25 | | | | |
| 34 | | 23 56 18 47 | 24 38 18 57 | 23 25 18 39 | | | | |
| 15 | 25 7 19 4 | 24 54 19 1 | | 24 23 18 53 | | | | |
| 36 | 26 5 19 18 | 25 51 19 15 | 25 35 19 11 | 25 21-19 8 | | | | |
| 17 | 27 3 19 31 | 26 49 19 28 | 26 33 19 24 | 26 18 19 21 | | | | |
| 18 | 28 58 19 57 | 28 44 19 54 | 27 31 19 38 | 28 14 19 48 | | | | |
| 19 | 29 56 20 10 | 28 44 19 54 | 29 26 20 3 | 28 14 19 48 | | | | |
| - | | | | | | | | |
| 21 | II 53 20 22 | 1 37 20 31 | II 24 20 16 | 1 720 25 | | | | |
| 23 | 2 49 20 45 | 2 35 20 42 | 2 19 20 39 | 2 420 36 | | | | |
| 24 | 3 46 20 56 | 3 32 20 53 | 3 10 20 50 | 3 2 20 47 | | | | |
| 25 | 4 44 21 7 | 4 30 21 4 | 4 14 21 1 | 4 020 58 | | | | |
| 26 | 5 41 21 17 | 5 28 21 14 | 5 11 21 12 | 4 57 21 9 | | | | |
| 27 | 6 39 21 27 | 6 25 21 25 | 6 921 22 | 5 55 21 19 | | | | |
| 28 | 7 36 21 36 | 7 22 21 34 | 7 621 32 | 6 52 21 29 | | | | |
| 29 | 8 34 21 46 | 8 20 21 44 | 8 4 21 41 | 7 50 21 39 | | | | |
| 30 | 19 31 21 55 | 9 17 21 52 | 9 121 50 | 8 47 21 48 | | | | |
| 31 | 10 28 22 3 | 10 15 22 1 | 9 59 21 59 | 9 45 21 56 | | | | |

| - | | | | NE hat | h 30 D | áys. | | 4030 |
|-------|--------------|---------|-----------------|--------|---------------------|----------------|---|-------|
| 1.3 | | Year. | First | Year. | Second | | Thire | Year. |
| K | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1770 |
| | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| ď | 'The' | The | The | The | The | The | The | The |
| | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's |
| Days. | Place. | Dec. | Place. | Dec. | Place. | Dec. | Place. | Dec. |
| S | 0 / | 0 / | 0 1 | 0 1 | 0 1 | 0 1 | 0 1 | 0 / |
| - | п | North | п | North | п | North | п | North |
| 1 | 11 26 | 22 11 | 11 12 | | 10 57 | 22 7 | 10 42 | 22 5 |
| 2 | 12 23 | 22 19 | 12 10 | | 11 54 | 22 14 | 11 40 | 22 13 |
| 3. | 13 21 | 22 26 | 13 7 | 22 24 | 12 51 | 22 21 | 12 37 | 22 20 |
| ł | 14 18 | 22 33 | 14 4 | 22 31 | 13 49 | | 13 34 | 22 28 |
| | 15 15 | 22 39 | 15 2 | 22 37 | 14 46 | 22 35 | 14 32 | 22 34 |
| 5 | 16 13 | 22 45 | 15 59 | 22 44 | 15 43 | | 15 29 | 22 41 |
| 3 | 17 10 | 22 51 | 16 57 | 22 49 | 16 39 | 22 48 | 10 26 | 22 47 |
| | 18 7 | 22 56 | 17.54 | 22 55 | 17 38 | | 17 34 | 22 52 |
| Į | 19 5 | 23 [| 18 51 | 23 0 | 18 35 | 22 58 | 18 21 | 22 58 |
| 2 | 20 2 | 23 6 | 19 49 | 23 4 | 19 33 | 23 3 | 19 18 | 23 2 |
| ı | | 23 10 | 20 46 | 23 9 | 20 30 | 23 7 | 20 16 | 23 7 |
| | 21 57 | 23 14 | | 23 12 | 21 27 | 23 11 | 21 13 | 23 11 |
| I | | | 22 40 | | 22 25 | and the second | 22 10 | 23 14 |
| ı | | 23 20 | | 23 19 | 100 | 23 18 | 23 7 | 23 17 |
| 1 | - | 23 22 | 24 35 | 23 21 | 24 19 | | 24 5 | 23 20 |
| 1 | | 23 24 | | 23 24 | 25 16 | | 25 2 | 23 23 |
| 1 | A-00 5 C.A. | 23 26 | 2 24 24 6 | 23 25 | 26 14 | | | 23 25 |
| | | 23 27 | 1000 | 23 27 | | 23 26 | 26 56 | 23 26 |
| | 28 38 | | 28 24 | 23 27 | The second second | 23 27 | 10 P 1 C 1 Re 2 T | 23 27 |
| | 29 35 | | | 23 28 | | 23 28 | 28 51 | 23 28 |
| 1 | 25 32 | 23 28 | 71371E /210 | 23 28 | | 23 28 | | 23 28 |
| | | 23 28 | | 23 28 | | 23 28 | | 23 28 |
| | 2 26 | | | 23 27 | 4 | 23 27 | 100 20 20 20 20 20 20 20 20 20 20 20 20 2 | 23 28 |
| | 3 24 | | | 23 20 | 2 54 | | 2 40 | |
| | (To) | 23 24 | | 23 24 | 126 | 23 24 | | 23 26 |
| 1 | 5 18 | c | (| 23 22 | 4 48 | | | 23 24 |
| | 12.1.1.1.1 | 23 20 | 1 24 E 3 - 12 E | 23 20 | DOMESTIC BELLEVILLE | 23 21 | 5 32
6 29 | 23 21 |
| | 7 12
8 10 | 0 1 5 7 | | 23 17 | | 23 18 | | 13 19 |
| | A 50 1 1 1 | | | 23 14 | 7 40 | | 7 26 | |
| 1 | 9 7 | 23 9 | 8 53 | 3 101 | 8 37 | 23 12 | 8 23 | 33 12 |

272 Table of the Sun's Place and Declination.

| | | JULY ha | th 31 Days. | |
|-------|-------------------------------|--|-----------------------|------------------------|
| - 1 | Leap Year. | First Year. | Second Year. | Third Year. |
| 135 | 1776 . 178 | | 1774 1778 | 1775 1779 |
| - | 1784 178 | | 1782 1786 | 1783 1787 |
| | The The | THE RESERVE OF THE PARTY OF THE | The The | The The |
| D | Sun's Sun' | | Sun's Sun's | Sun's San's |
| Days: | Place. Dec. | | Place. Dec. | Place. Dec. |
| •7 | | 0101 | 0101 | 0101 |
| - | 95 Nort | | 95 North | 95 North |
| 1 | 10 4 23 | 9 50 23 6 | 9 35 23 7 | 9 21 23 8 |
| 2 | | 1 10 48 23 2 | 10 32 23 3 | 10 18 23 4 |
| 3 | 11 58 22 5 | 6 11 45 22 57 | 11 29 22 58 | 11 15 22 59 |
| 4 | 12 55 22 5 | 1 12 42 22 52 | 12 26 22 53 | 12 12 22 54 |
| 5 | 13 53 22 4 | | 13 23 22 48 | 13 9 22 49 |
| 6 | 14 50 22 3 | | 14 20 22 42 | 14 6 22 43 |
| 7 8 | 15 47 22 3 | | 15 18 22 35 | 15 4 22 37 |
| | 16 44 22 2 | 01 | 16 15 22 29 | 16 1 22 30 |
| 9 | 17 41 22 1 | | 17 12 22 22 14 | 16 58 22 23 |
| 10 | 37 | | | 1 33 |
| 11 | - 3 3- | 2 19 23 22 4 | 19 6 22 6 | 18 52 22 8 |
| 12 | 20 33 21 5 | | 20 4 21 58 | 19 50 22 0 |
| 13 | 21 30 21 4 | 5 21 17 21 47
6 22 14 21 38 | 21 121 49 | Commence of the second |
| 14 | COUNTY AS A SECOND ASSESSMENT | 6 23 12 21 28 | 21 58 21 40 | 21 44 21 43 |
| 15 | | | | |
| 16 | | | 23 53 21 22 | 3 37 |
| 17 | 25 20 21
26 17 20 5 | 1 3 | 24 50 21 12 | 24 36 21 14 |
| 18 | | | 26 44 20 50 | 26 30 20 53 |
| 19 | 28 12 20 3 | | 27 42 20 39 | 27 28 20 42 |
| 21 | | | 28 39 20 28 | 28 24 20 30 |
| 22 | 1 2 | 9 29 52 20 12 | 29 36 20 16 | 29 22 20 18 |
| 23 | 1 319 5 | | 8 34 20 3 | \$ 20 20 6 |
| 24 | 2 119 4 | | 1 31 19 51 | 1 17 19 54 |
| 25 | 2 58 19 3 | | 2 28 19 38 | \$ 14 19 41 |
| 26 | 3 55 19 1 | | 3 26 19 25 | 3 12 19 28 |
| 27 | 3 33 3 | 4 4 39 19 8 | 4 23 19 11 | 4 9 19 15 |
| 28 | | 5 37 18 54 | | |
| 29 | 5 50 18 5 | 6 34 18 39 | 5 20 18 57 6 18 18 43 | 6 4 18 47 |
| 30 | 7 45 18 2 | | 7 15 18 29 | 7 1 18 32 |
| 31 | | 7 31 18 25 | 8 13 18 14 | 7 59 18 18 |

| -1 | - | | | UST | 38.00 | | and and | the transfer |
|-------|--------|------------------|--------|-----------|--------|-------|---------|--------------|
| | Leap | Year. | | Year. | | Year. | | Year |
| 0 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 3 | 1784 | 1788 | 1781 | - 1785 | 1782 | 1786 | 1783 | 1787 |
| | The | The | The | I'he | The | The | The | The |
| | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | Sun' |
| Davs. | Place. | Dec. | Place. | Dec. | Place. | Dec. | Place. | Dec. |
| | 0 1 | 0 1 | 0 1 | 0.1 | . 1 | 0 1 | 0 1 | 0 1 |
| 7 | 2 | North | SL | North | R | North | R | North |
| 1 | 9 40 | 17 51 | 9 26 | 17 55 | 9 10 | 17 50 | 8 56 | 18 |
| 2 | 10 37 | 17 36 | 10 24 | 17 39 | 10 8 | 17 44 | 9 54 | 17. 47 |
| 3 | 11 35 | 17 20 | 11 21 | 17 23 | 11 5 | 17 28 | 10 51 | 17 3 |
| 4 | 12 32 | 17 4 | 12 19 | 17 7 | 12 3 | 17 13 | 11 49 | 17 16 |
| | | 16 48 | 1; 16 | 16 52 | 11 0 | 16 57 | 12 45 | 17 0 |
| 5 | 14 27 | 10 31 | 14 14 | 16 35 | | 16 40 | 13 44 | - |
| | 15 24 | 16 14 | 15 11 | 16 18 | 14 55 | 16 23 | 14 41 | 16 43 |
| 7 8 | | 15 57 | 10 9 | 16 i | 15 53 | | 15 39 | 16 16 |
| 9 | 17 20 | 15 39 | 17 7 | 15 43 | | 15 49 | 16 30 | 15 5 |
| 10 | 18 18 | 15 22 | 18 4 | 15 26 | 17 48 | 15 31 | 17.34 | 15 39 |
| - | _ | _ | - | - | | | - | 7 |
| | 19 15 | 15 4 | 19 2 | | | 15 13 | | 11. |
| 12 | 21 11 | 14 27 | | 14 50 | 19 43 | | 19 29 | 14 4 |
| 3 | 22 8 | 14 9 | 20 57 | 14 13 | 21 39 | 4 3/ | 21 25 | 14 4 |
| 14 | 23 6 | 13.50 | 22 52 | 13 55 | 22 36 | 14 1 | 22 22 | 14 |
| 15 | - | | - | | - | | | - |
| | 24 4 | | 23 50 | 13 36 | | 13 42 | 24 18 | 13 45 |
| 17 | | 13 12
12 52 | 24 48 | | 24 32 | | 24 18 | 200 |
| 19 | 26 57 | 12 32 | 25 40 | | 25 30 | 13 3 | 26 13 | 13 7 |
| 20 | 27 55 | Tz 13 | 27 41 | 12 37 | 27 25 | 12 43 | 27 11 | 12 2 |
| ion i | - | - | - | | | 1 1 1 | 1000 | 2 +0 |
| 21 | 28 53 | 11 52 | 28 39 | 11 57 | | 12 3 | 1 1 7 | |
| 22 | 29 51 | | 29 37 | 11 37 | | 11 44 | | 11 48 |
| 23 | 项 49 | 1 1 1 1 | 取 35 | 11 17 | 11月19 | | 双 5 | 11 27 |
| 24 | 2 45 | 10 51 | 1 33 | 10 36 | 1 17 | | 2 1 | 11 7 |
| 25 | | _ | - | _ | - | | - | |
| 26 | 3 43 | 10 9 | 3 29 | 10 15 | 3 13 | | 2 59 | 10 2 |
| 27 | 4 41 | 9 48 | 4 27 | 9 54 | 4 11 | 9 59 | 3 57 | 10 |
| | 5 39 | 9 48 9 27 9 6 | 5 25 | 9 32 | 5 9 | 9 38 | 4 55 | 9 43 |
| 29 | | 9 48 9 27 6 8 44 | 6 23 | 9 11 8 49 | 3. 7 | 9 17 | 5 53 | 9 2 |
| 30 | 7 35 | 8 44 | 8 19 | | 55 78 | | 5 5 7 7 | 9 3 |
| 31 | 0 33 | 8 22 | 8 19 | 0 20 | 0 3 | 8 34 | 7 49 | 8 35 |

274 Table of the Sun's Place and Declination.

| | | SEPTEMBER | | |
|--------|--|--|--|---|
| | Leap Year. | First Year. | Second Year. | Third Year. |
| | 1776 1780 | 1773 1777 | 1774 1778 | 1775 1779 |
| See. | 1784 1788 | 1781 1785 | 1782 1786 | 1783 1787 |
| 34 | The The | The The | The The | The The |
| U | Sun's Sun's | Sun's Sun's | Sun's Sun's | Sun's Sun's |
| Days. | Place. Dec. | Place Dec. | Place. Dec. | Place. Dec. |
| | 0101 | 0 1 0 1 | 0 1 0 1 | 0 / 0 / |
| - | m North | m North | mg North | mg North |
| 1 | 9 31 8 1 | 9 17 8 6 | 9 1 8 12 | 8 47 8 16 |
| 2 | 10 29 7 39 | 1 / / | 9 59 7 50 | 9 45 7 55 |
| 3 | 11 28 7 16 | | 10 57 7 27 | 10 44 7 33 |
| 4 | 12 26 6 54 | | 11 56 7 5 | |
| 5 | 13 24 6 32 | | 12 54 6 43 | 12 40 6 49 |
| 6 | 14 22 6 9 | All the second second second second | 13 52 6 20 | ¥3 38 6 20 |
| - | 15 21 5 47 | | 14 51 5 58 | 14 37 6 |
| 7 8 | 16 19 5 24 | | 15 49 5 35 | PS 35 5 4 |
| 9 | 17 18 5 1 | | 16 47 5 13 | 16 33 5 1 |
| 10 | 18 16 4.39 | | 17 46 4 50 | 17 32 4 5 |
| - | | | 18 45 4 27 | 18 30 4 3 |
| 11 | 20-13 3 53 | | 100000000000000000000000000000000000000 | 19 29 4 1 |
| 12 | 21 12 3 30 | | | 20 27 3 4 |
| 13 | 22 10 3 7 | | THE RESERVE OF THE PARTY OF THE | 21 26 3 2 |
| 14 | 23 9 2 4 | | 22 38 2 55 | 22 24 3 |
| 15 | | | | |
| 16 | - T | 2 /2 | 23 37 2 31 24 36 2 8 | 23 23 2 3 |
| 17 | | | | 25 20 1 5 |
| 77 | CONTRACTOR AND | | The second second second | 26 19 1 2 |
| 19 | 28 2 0 4 | | A COLUMN TO SECURE | |
| - | | | | |
| 21 | Canal | SECTION AND ADDRESS OF THE PARTY OF THE PART | THE RESERVE AND THE PARTY OF THE PARTY | AND DESCRIPTION OF THE PERSON |
| 22 | 1 | | | △ 14 S. |
| 23 | 1 A A A A | THE RESERVE OF THE PARTY OF THE | THE RESERVE OF THE PARTY OF THE | - T |
| 24 | 10 10 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Market Street, or Article Market Street, | | |
| 25 26 | | | | 1- |
| 1 | | | The state of the s | |
| 27 | | | | |
| 600.00 | 2 | 7 37 7 | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | 0 2 21 |
| 29 | | | de la de la | The state of the state of |
| 30 | 7 51 3 | 7 7 37 3 2 | 7 21 2 55 | 1 4 |

| 1 | 77 | - tr 44 | 1 7 1 1 1 1 1 | OBER h | | Days. | december. | - |
|-------|--|---------------|---------------|-------------------|-------------------|---------------------|-------------------|----------------------|
| 1 | Leap ' | Year. | First ' | Year. | Second | | Third | Year. |
| - | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 1 | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| | The | The | The | The | The | The | The | The
Sun's |
| Ä | Sun's | Sun's | Sun's | Sun's | Sun's | Sun's | | Dec. |
| Days. | Place. | Dec. | Place. | Dec. | Place. | Dec. | Place. | 0 / |
| | 0 / | 0 / | 0 / | | 9 | | | |
| L | 4 | South | 4 | South | 4 | South | THE STREET STREET | South |
| 1 | 8 51 | 3 31 | 8 36 | 3 25 | ,8 zo | 3 19 | 8 6 | 3 13 |
| 2 | 9 50 | 3 54 | 9 30 | 3 48 | 9 19 | 3 42 | 9 5 | 3 36 |
| 3 | 10 49 | 4 17 | 10 35 | 4 11 | 10 18 | | 10 4 | 4 23 |
| 4 | 11 48 | 4 40 | 11 34 | | 12 17 | | 12 3 | 4 46 |
| 5 | 12 47 | | 12 33 | - | | | | 5 9 |
| 6 | 13 47 | | 13 33 | | | 5 15
5 38
6 1 | 13 2
14 I | 5 22 |
| 7 8 | 14 46 | 5 50 | 14 32 | 5 44 | 14 16 | 6 1 | 15 1 | 5 34
5 55
6 18 |
| | 15 45 | 6 35 | 15 31 | The second second | 16 1 | | 16 0 | 6 18 |
| 9 | 16 45 | 6 58 | 17 30 | The second second | 17.1 | | 16 59 | |
| 10 | The state of the s | | 18 30 | | 18 1 | | | - |
| | | | 19 29 | 7 38 | | 7 32 | 18 58 | 7 20 7 41 8 1 |
| 12 | 10 1 10 10 10 10 10 | | 20 20 | | | 2 7 55 | 19 58 | 7 49 |
| 13 | Company of the second | 1 0 0 | 21 2 | | 21 1 | 2 8 17 | 20 57 | DOM: NOT |
| | | | 22 2 | | 22 1 | 2 8 39 | 21 57 | 8 3 |
| 10 | | THE RESIDENCE | | | 23 1 | 1 9 1 | 22 5 | 8 5 |
| i. | | | | | The second second | 1 9 23 | 23 5 | 9 1 |
| 1 | | 1 9 50 | 25 2 | 7 9 51 | 25 1 | | 24 5 | 9 4 |
| 1 | the second second | | 26 2 | | The Critical Con- | 010 7 | 25 5 | |
| 2 | | | | 1 | | 0 10 29 | 26 5 | |
| 2 | 1 28 4 | 111 | 28 2 | 610 36 | 10 Chan 11 C | 0 10 50 | 27 5 | 5 10 4 |
| 2 | | 0 11 2 | 1000 | 611 17 | 29 1 | 0 11 12 | Trans. 1 - C & | 5 11 2 |
| 2 | 3 m 4 | 011 43 | A 12 1 20 | 6 11 38 | | 011 32 | 19 5 | 5 11 4 |
| | 4 1 4 | 013 | | 611 59 | | 0 11 53 | 1 3 | 5 12 |
| 1 | 2 4 | 0 12 2 | - | 6 12 20 | | - | | |
| 1 | 26 3 4 | 0 12 4 | | 6 12 40 | 3 | | 2 5 | 5 12 5 |
| H | 4 4 | 013 2 | | 613 | 5.1666 | 10 12 55 | | 5 13 |
| | | 1013 2 | 6 5 | 6 13 2 | 7 | 10 13 15 | 4 5 | 5 13 |
| 1 | | 10 13 4 | COLUMN TO THE | 613 4 | 4.5 4.65 | 1013 5 | | 5 13 |
| | | 10 14 2 | | 26 14 2 | | 10 14 1 | | 5 14 |

Table of the Sun's Place and Declination.

| | NAME OF TAXABLE PARTY. | market and an area | NOVE | MREK | hath 30 | Days. | minutes of | |
|-------|---|------------------------|--------------|---------------|--------------------|-------------|------------|-------|
| | | Year. | First' | Year. | Second | | Third | - |
| 26 | 1776 | 1780 | 1773 | 1777 | 1774 | 1778 | 1775 | 1779 |
| 35 | 1784 | 1788 | 1781 | 1785 | 1782 | 1786 | 1783 | 1787 |
| UT IS | The | The | The | The | The | The | The | The |
| U | Sun's | Sun's | Sun's | San's | Sun's | | Sun's | |
| Days. | Place. | Dec. | Place. | Dec. | Place. | Dec. | Place. | Dec. |
| 00 | D / | 0 7 | 0 1. | 0.7 | 0 / | 0 7 | 0 / | 0 1 |
| - | m | South | m | South | m | South | m | South |
| | 9 40 | | | 14 39 | 9 9 | 14 33 | 8 55 | |
| 1 2 | 10 41 | 15 3 | 10 26 | 14 58 | 10 10 | | A CARLOTTE | 14 49 |
| | | 15 21 | | 15 17 | 11 10 | is it | 10 56 | |
| 3 | 12 41 | 15 40 | 12 27 | | 12 10 | | 11 56 | 15 20 |
| 4 5 | 13 4 | 112 -0 | 13 27 | A TO THE REST | 13 10 | 15 48 | 12 56 | 15 44 |
| 6 | The second | 16 16 | 14 27 | 16 12 | 14 16 | 16 6 | 13 56 | 10 |
| | | 16 34 | | 16 29 | 15 11 | 16 24 | 14 57 | |
| 7 | | 16 51 | | 16 47 | 16 11 | 11 1 | | 16 38 |
| . 4 | 17 43 | | 17 28 | 1 1 100 | 17 12 | The second | 10 57 | 16 5 |
| 9 | 18 43 | | 18 29 | | 18 12 | 17 17 | 17 58 | |
| - | - | 17 41 | 19 29 | | 19 13 | | 18 58 | - |
| ir | | 17 58 | | 17 54 | | 17 49 | 19 59 | |
| 12. | | 18 14 | | 18 10 | | 18 5 | 20 59 | 18 |
| 13 | 22 46 | 18 29 | | 18 25 | | 18 21 | | 18 17 |
| 14 | | 18 44 | 23 31 | 10. 2 | | 18 36 | 23 0 | 18 3 |
| 15 | 24 47 | | | 18 55 | | 18 51 | 24 1 | 18 4 |
| 16 | | 19 14 | | 10 10 | | 10 6 | La Barrer | 19 |
| 17 | | 19 28 | | 19 24 | | 19 20 | 1 50 | 19 1 |
| 18 | | 19 42 | | 19 38 | 27 17 | 10 3. R. C. | Acres to a | 19 3 |
| 19 | | 19.55 | | 19 52 | the second second | 19 48 | | 19 4 |
| - | 17 | 20 8 | 29 35 | | 29 19 | 1 | 29 4 | 19 5 |
| 21 | | 20 21 | | 20 18 | | 20 15 | | 20 1 |
| 22 | Migi | NAME OF TAXABLE PARTY. | 1 37 | Marie Allian | | 20 28 | | 20 2 |
| 24 | A PERSON NAMED IN | 20 46 | 2 37 | | 2 21 | 4 14 | 2 6 | 20 3 |
| | 1 2 2 2 2 2 | 20 57 | 3 38 | | 3 22 | | 3 7 | 20 4 |
| 25 | - | | - | - | 4 22 | - | - | 21 0 |
| 26 | ALC: NO SECOND | | 4 39 | | No. of the last of | 21 14 | 1.00 | 21 1 |
| 27 | | 21 19 | | 21 17 | 1 1 1 1 1 1 | 21 25 | 1 | 21 2 |
| 200 | 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 21 40 | THE THIRD IN | 21 37 | | 21 35 | | 21 3 |
| 30 | 8 57 | | | 21 47 | 4 5 6 6 6 6 7 | 21 45 | 1.1 | 21 4 |

| F | The same of the same of the same of | DECEMBER | hath 31 Days | |
|-------|-------------------------------------|-----------------------|--------------|-------------|
| 1 | Leap Year. | Firtt Year. | Second Year. | Third Year |
| | 1776 1780 | 1 - / / 3 - / / / | 1774 1778 | 1775 1779 |
| _ | 1784 1788 | 1781 1785 | 1782 1786 | 1783 1787 |
| 1 | The The | The The | The I The | The The |
| 10 | Sun's Sun's | Sun's Sun's | Sun's Sun's | Sun's Sun's |
| Days. | Place. Dec. | Place. Dec. | Place. Dec. | Place. Dec. |
| 1. | 0101 | 0101 | 0101 | 0101 |
| - | 1 South | South | South | 1 South |
| 1 | 9 58 21 58 | 9 44 21 56 | 9 28 21 54 | 9 12 21 52 |
| 2 | 10 59 22 7 | 10 45 22 5 | 10 29 22 3 | 10 13 22 1 |
| 3 | 12 0 22 15 | 11 46 22 13 | 11 30 22 11 | 11 14 22 9 |
| 4 | 13 1 22 23 | 12 47 22 21 | 12 31 22 19 | 12 15 22 17 |
| 5 | 14 2 22 31 | 13 48 22 29 | 13 32 22 27 | 13 16 22 25 |
| 6 | 15 3 22 38 | 14 49 22 36 | 14 33 22 33 | 14 17 22 33 |
| 7.8 | 16 4 22 44 | 15 50 22 43 | 15 34 22 40 | 15 18 22 39 |
| | 17 5 22 50 | 16 51 22 49 | 16 35 22 47 | 16 19 22 46 |
| 9 | 18 6 22 56 | 17 52 22 55 | 17 36 22 53 | 17 20 22 52 |
| 10 | 19 7 23 1 | 18 53 23 0 | 18 37 22 58 | 18 21 22 58 |
| 11 | 20 823 6 | 19 54 23 . 5 | 19 38 33 3 | 19 22 23 3 |
| 12 | 21 10 23 10 | 20 55 43: 9 | 20 39 23 8 | 20 23 23 7 |
| 13 | 22 11 23 14 | 21 56 23 13 | 21 40 23 12 | 21 24 23 11 |
| 14 | 23 12 23 18 | 22 57 23 17 | 22 41 23 16 | 22 25 23 15 |
| 15 | 24 13 23 21 | 23 58 23 20 | 23 43 23 19 | 23 26 23 18 |
| 16 | 25 14 23 23 | 24 59 23 22 | 24 44 23 21 | 24 28 23 21 |
| 17 | 26 15 23 25 | 26 023 24 | 25 45 23 23 | 25 29 23 24 |
| 18 | 27 10 23 27 | 27 1 23 26 | 26 46 23 25 | 26 30 23 25 |
| 19 | 28 17 23 28 | 28 2 33 27 | 27 47 23 27 | 27 31 23 27 |
| - | 29 19 23 28 | 29 3 23 28 | 28 48 23 28 | 28 32 23 28 |
| 21 | b 20 23 28 | 15 5 23 28 | 29 49 23 28 | 29 33 23 28 |
| 22 | 1 21 23 28 | 1 6 23 28 | 5 50 23 28 | 35 23 28 |
| 23 | 2 22 23 27 | 2 7 23 27 | 1 51 23 27 | 1 3023 28 |
| 24 | 3 23 23 26 | 3 8 23 26 | 2 53 23 26 | 2 37 23 27 |
| 26 | | 4 10 23 24 | 3 54 23 24 | 3 38 23 25 |
| 27 | 5 27 23 21 6 28 23 10 | 5 11 23 22 6 12 23 10 | 4 55 23 24 | 4 39 23 23 |
| 28 | | | 5 56 23 20 | 5 41 23 21 |
| 29 | | 7 13 23 16 | 6 58 23 17 | 6 42 23 18 |
| 30 | 9 30 23 8 | | 7 59 23 14 | 7 43 23 15 |
| 2 | 10 31 23 3 | 9 16 23 9 | 9 0 23 10 | 8 44 23 11 |
| 147 | 3.13 | 10 17 23 4 | 10 1 23 5 | 9 45 23 6 |

TABLE XXIII.

TA

Alg

The

Pol Sou Acl

Ala

In

Ary Th Ple Ale

Ca Rig Th Th No

Mi Son Bri In The Call In Sylver To Call Pro Bri Co

For changing the Sun's Declination from the Meridian of Greenwich, to any other Meridian, or to any Time of the Day.

Difference of Longitude from Greenwich, or Time before or after Noon.

| _ | 1 | OI | | | | .5 | | 10 h h | | | 15.1.4 | - |
|------------------|-----------------------|-----|-----|-----------|-----|-----------|-------------|--------------|------------|------------|------------|-----|
| DailyDit of Dec. | Deg. 15.
Hours. I. | 30 | đί. | 60
IV. | ₹5. | 90
VI. | 105
VII. | 120
VIII. | 135
IX. | 150
X. | 165
XI. | 18d |
| Min. | Min. | 1 | 2.2 | 10 | 110 | 915 | 2 | 1110 | t | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | - | 0 | 0 | 0 | 0 | 0 | 1. | 10 | 1- | 1 | 1 | 1 |
| 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1. | 4 1 | 1 | 1 | 1 | 1 |
| 4 | 0 | 0 | 0 | Ic | 1 | 1 | 11 | - 10 | 2 | 2 | 2 | 2 |
| 5 | 0 | 0 | 1 | 1 | 1 | .1 | | 12 | 2 | 2 | 2 | 2 |
| 6 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 |
| 7 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 3- | 3 | 3 | | 3 |
| - 8 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 1 |
| 9 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 13 | 4 | 4 | 1 4 |
| 10 | 0 | 1 | 1 | 2 | 2 | 2 | 3 3 3 | 3 | 4 | 4 | 5 | 5 |
| 11 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | Da 18 | 1 1 | 5 | 5 | 5 |
| 12 | - 0 | 1 | 1 | 2 | 2 | 3 | | 1 4 | 1 | The second | 5 | 6 |
| 13 | | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 5 6 | 5 | 6 | |
| 14 | 1, | 1 | 2 | 2 | 3 | 3 | 4 | 1 5 | 1 2 | 6 | 10 1 | 7 |
| 15 | 1 | I | 2 | 3 | 3 | 4 | 4 | 50 | 6 | 7 | 7 | 8 |
| - | 1 | 1 | 2 | 3 | 3 | 4 | 5 | | 1 | - | 8 | 8 |
| 17 | T. | 1 | 2 | 3 | 4 | 4 | 5 5 | 6 | 6 | 7 | 8 | |
| A 10 | Man 1 | 2 | 2 | 3 | 1 4 | 4 | 1 5 | 6 | 7 | 18 | 9 | 9 |
| 19 | 6 42 | 2 2 | 2 | 3 | 1 | 5 | 6 | 7 | 7 | 8 | 9 | 10 |
| 20 | 1 | - | - | _ | 1 | 5 | 1 | | 8 | - | 10 | 10 |
| 21 | 18 | 1 | 3 | 30 | 1 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 |
| 22 | 10 | 2 | 3 | 4 | 5 | 5 | 6 | 7 8 | | 10 | 11 | lii |
| 23 | 1 | 2 | 3 | 14 | 5 | 6 | 7 | 8 | 9 | 100 | 4 | 112 |
| 24 | 1 | . 2 | ! 3 | 14 | 13 | 10 | . / | 1 0 | 19 | - 10 | ed 195 | - |

TABLE XXIV. Of the Right-Ascension and Declination of the principal fixed Stars.

| NAMES of the STARS. | Cha | Magnit | in I une | Rt Afc. | De | clin | at. |
|---|-----------|-----------------------|----------|----------------|----------------------------|----------------------------|----------------|
| Algenib, in the Wing of Pegakus In the Head of the Phænix Schedar, in the Breast of Cassiopea The bright Star in the Tail of the Whale In the Girdle of Cassiopea | · Yaus y | 2 | 10000 | 15
28
33 | 13
43
55
19
59 | 33 | N. S. N. |
| Pole-Star, in the Tail of the Little Bear
South: ** in Andromeda's Girdle, Mirach
Achenar, the Spring of the River Eridanus
Almarck, in the Left-Foot of Andromeda
The Head of the Male Hydra | Ba | 1 2 | 1 0 | 57 30 | 38
34
58
41
62 | 27
21
16 | N. N. S. N. S. |
| In the Jaw of the Whale, Menkar . Argol, in the Head of Medusa . The bright Star of Perseus, Algenib . Pleiades, vulgo 7 Stars, in Neck of the Bull Aldebaran, South Eye of the Bull . | a B a m a | 2 | 3 | 9 34 | 49 | 6 4 25 | N. N. N. N. |
| Capella, in the Left-Shoulder of Auriga
Rigel, the bright Foot of Orion
The North Horn of the Bull
The western Shoulder of Orion
Northermost Star in the Belt of Orion | 800 ×60 | 2 | 5 5 5 5 | 4 | 8
28
6 | 46
28
24
8
29 | S.
N. |
| Middle Star in the Belt of Orion Southermost Star in ditto Bright Star in the Dove In Auriga's eastermost Shoulder Theeastern Shoulder of Orion, Betelgeuse | 1 2 2 2 2 | 2 | 555 | 30 | 34
44 | 21
5
12
54
21 | S. S. N. N. |
| Canobus, bright Star in Poop of Ship Argo
In Feet of Gemini
Strius, bright Star in Great Dog's Mouth
The Back of the Great Dog
The Throat of the Great Dog | 7 | 2 | 6 | 35
0 | 52
16
16
26
28 | 34 25 3 | S. N. S. S. |
| Castor, in the Head of Northern Twin Procyon, in the Little Dog Pollux, in the Head of the Southern Twin Bright Star in the Oars of Ship Argo . Cor Hydræ, or Alphard | a a B B a | 1
2
2
1
2 | 77799 | 28
32 | 5
28
61 | 21
47
33
49
43 | N. |

280 Right-Ascension and Declinat. of fixed Stars.

| NAMES of the STARS. | Charact | Magnit | in I ime | Rt Afc. | De | cli | nat |
|---|------------------|--------|----------------------------------|----------------------------|----------------------------|----------------|----------------|
| | 3 | 7 | h. | m. | 0 | 1 | |
| Regulus, the Lion's Heart Northermost Pointer in Great Bear, Dubhe Deneb Alased, in the Lion's Tail S. following in Square of the Great Bear The last in the Square of the Great Bear | B | 2 | 11 | 38 | 15 | 48 | NNN |
| Southermost Star of Crossers, Foot of Cross The Head of the South Cross The following Arm of the Cross Aleath, in the Tail of the Great Bear The Virgin's Spike, Arista | αγβια | 2 | 12
12
12 | 14
20
35
44
13 | 7º
58
57 | 55
29
9 | S. |
| Middle of the Tail of the Great Bear. Last Star in the Tail of the Great Bear Westermost Foot of Centaur Arcturus in Bootes The bright Star in second Foot of Centaur | SnB a a | 1 | 13
13
14 | 15
39
48
6
25 | 59
20 | 25
18
21 | S.
N. |
| Southern Scale of Libra Northern Scale of Libra Bright Star of the Crown Bright Star in the Serpent Northern Star in Scorpion's Forehead | 23 2 23 | 2 2 | 15 | 38
5
25
33
52 | 8
27
7 | 33
28
7 | S.
N.
N. |
| Antares, or Scorpion's Heart Bright Star of the Southern Triangle. Ras Algethi, in the Head of Hercules. The End of the Scorpion's Tail Head of Ophiuchus | α
α
α
λ | 2 2 | 16 | 16
25
5
19
25 | 68
14
36 | 36
39
55 | S.
N.
S. |
| Bright Star of the Harp, Lyra Altair, bright Star in the Eagle Peacock's Eye Swan's Tail Westermost Wing of the Crane | a a a a a | 2 2 | 20 | 30
40
8
34
54 | 57
44 | 25 | S. |
| Fomalhaut, in Mouth of Southern Fish
In Shoulder of Pegasus
Markeb, in Wing of Pegasus
The Head of Andromeda
The Chair of Cassiopea | 28 2 28 | 2 | 22
22
22
22
22
23 | | 30
26
14
27
57 | 54
2
53 | SZZZZ |

TABLE XXV.

For the North-Star.

| Time the
Star is dif-
tant from
the Meri-
dian. | Star a- | Time the
Star is dif-
tant from
the Meri-
dian | |
|---|----------|--|--------|
| Hrs Min. | 0 1 | Hrs Min. | 0 1 |
| 0 0 1 | 1 . 56 . | 3 .0 | 1. 22 |
| 0 15 | 1 50 | 3 15 | 1 17 |
| 0 30 | 1 55 | 3 30 | 1 11 |
| 0 45 | 1 54 | 3 45 | 1 5 |
| 1 0 . | .1 . 52 | 40 | 0 58 |
| 1 15 | 1 50 | 4 15 | 0 51 |
| 1 30 | 1 47 | 4 30 | 0 44 |
| 1 45 | 1 .44 - | 4 45. | 0 37 - |
| 2 ,0 | .1 4.0 | 50 | 0.30 |
| 2 15 | 1 36 | 5 15 | 0 22 |
| 2 30 | 1 32 | 5 30 | 0 15 |
| 2 45 | 1 .27 | 5 45 | 0 7 |
| 3.0 | 1 2,2 | 6.0 | 0 0 |

 \mathfrak{B}

TABLE XXVI.

Moo ap. A

For correcting the Time found, by corresponding equal Altitudes of the Sun.

| | La | titu | de | 30 | Deg | g. | La | tit | ide | 40 | De | g. | La | titu | de | 50 | Dej | 3. | L | titi | ade | 60 | Det | g. | |
|-------------|-------|-------|----------|----------|------|-------|-------|----------------|-----|------|------|------|------|------|-----|------|------|----------|----------------|----------------|------|-----------|----------------|----------------|---------|
| Degrees | Ho | ours | be | tw. | Ob | c. | Н | ours | bc | tw. | OL | c. | Н | ours | be | tw. | Ob | f. | н | our | be | tw. | ОЬ | 1 | Deg |
| 90 | 6 | 51 | 4 | 6 | 51 | 4 | 61 | 51 | 4 | 6 | 15 | 14 | 61 | 51 | 4 | 61 | 5 | 4 | 61 | 5 | 4 | 6 | 5 | 4 | rees of |
| Declination | N. | Dec | al. | s. | Dec | 1. | N. | Dec | :1. | s. | De | cl. | N. | De | cl | s. | De | cl. | Z | De | cl. | s. | De | cl. | Decin |
| tion. | Sec. | Sec. | Sec. | Sec | Sec. | Sec. | Sec. | Sec. | Sec | Sec. | Sec. | Sec. | Sec. | Sec. | Sec | S.c. | Sec. | Sec. | Sec | Src. | Sec. | Sec. | Sec | Sec | arion. |
| 0 | 9 | 9 | 80 00 00 | 9 | 9 9 | 8 | 14 | - | | 14 | | 13 | | 19 | 18 | | 19 | | K 184 | 28 | | 28 | | 27 | - |
| 2 3 4 5 6 | 988 | 8 8 | | 10 | 9 9 | 9 9 9 | 13 | 13
12
12 | 12 | | 14 | 13 | 18 | 18 | | 10 | | 18 | 28 | 27
27
26 | 26 | 29.
29 | 28 | 27 | |
| 5 | 8 | 7 | - | 10 | 10 | 10 | 12 | 12 | 11 | 15 | 14 | 14 | 18 | 17 | 17 | 2¢ | | 19 | 27 | 26 | 25 | 29 | -3 | - | - |
| 78 | 7 7 | 7 | 6 | 10 | 10 | 10 | 12 | - | | 15 | 4 | 14 | 17 | | | 20 | 20 | 19 | 26 | 2 | 24 | 29 | 28 | 27 | |
| 901 | 7 7 6 | 6 6 | 5 | 10
10 | | 10 | 11 10 | | 10 | 15 | 15 | | 16 | 1.3 | 15 | 20 | 19 | 19
19 | 25
24
23 | 23 | 23 | | 2S
2S
27 | 27
27
27 | , |
| 2 3 4 | 6 | 6 | 5 | 10 | 10 | 10 | 10 | 9 9 8 | 9 | | 14 | 14 | 15 | 14 | 14 | 19 | 19 | 18 | 22 | 21 | 1-1 | - | 27 | 26 | 1 |
| 56 | 5 5 5 | 5 | 4 | 19 | 9 | 9 | 8 8 | 8 | 7 | 14 | 14 | 14 | 13 | 12 | 12 | 18 | 18 | 17 | 19 | 19 | 18 | | 25 | 25 | 12 |
| 7 8 | 4 | 4 4 3 | 3 | 9 | 19 | 8 | 7 | 15 | 6 | 12 | | 12 | 11 | 11 | - | 16 | - | - | 17 | 17 | 16 | | | 23 | Ŀ |
| 90 | 3 | 3 2 | 2 | 8 | 8 | 8 | 6 5 | 1 5 | 1 | 11 | 111 | | 10 | | | 14 | 14 | 14 | 15 | 14 | 13 | | | 19 | 1 |
| 1 2 | 1 0 | 2 | 1 | 7 | 7 | | 4 3 | 1 3 | 3 2 | | | | | 1 | | | 11 | 11 | 12 | 11 | 10 | | | 14 | 1 2 |

The Correction is subtractive from December 22 to June 21, or in ascending Sines; and additive from June 21 to December 22, or in descending Sines.

| Moon
ap. Al | 54' | 55' I | he Mo | on's H | orizon | tal Da | eallaw | 118 11 | |
|----------------|----------------|--------|-------|--------|--------|--------|--------|--------|--------|
| 1 | | 55' [| | | OLILON | | | | |
| 1 | 54.0 | | 561 | 57' | 581 | 59'1 | 60' | 61' | 61/1 |
| 2 | | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 61.5 |
| | 54.0 | 55.0 | 56.0 | 57.0 | 58.0 | 59.0 | 60.0 | 61.0 | 61.5 |
| 3 | 53.9 | 54.9 | 55.9 | 56.9 | 57.9 | 58.9 | 59.9 | 60.9 | 61.4 |
| 4 | 53.9 | 54.8 | 55.8 | 56.8 | 57.8 | 58.9 | 59.9 | 60.9 | 61.4 |
| 5 6 7 8 | 53.8 | 54.8 | 55.8 | 56.8 | 57.8 | 58.8 | 59.8 | 60.8 | 61.3 |
| 6 | 53.7 | 54.7 | 55.7 | 56.7 | 5747 | 58.7 | 59.7 | 60.7 | 61.2 |
| 7 | 53.6 | 54.6 | 55.6 | 56.6 | 57.6 | 58.6 | 59.6 | 60.6 | 61.1 |
| | 53.5 | 54.5 | 55.5 | 56.4 | 57.4 | 58.5 | 59.5 | 60.4 | 60.9 |
| 9 | 53.3 | 54.3 | 55.3 | 56.3 | 57.3 | 58.3 | 59.3 | 60.3 | 60.8 |
| 10 | 53.2 | 54.1 | 55.1 | 50.1 | 57.1 | 58.1 | 59.1 | 60.1 | 60.6 |
| 11 | 53.0 | 54.0 | 55.0 | 56.0 | 56.9 | 57.9 | 58.9 | 59.9 | 60.4 |
| 12 | 52.8 | 53.8 | 54.8 | 55.8 | 56.7 | 57.7 | 58.7 | 59-7 | 60.2 |
| 13 | 52.6 | 53.6 | 54.6 | 55.5 | 56.5 | 57.5 | 58.5 | 59.4 | 59.9 |
| 14 | 52.4 | 53 4 | 54.3 | 55.3 | 56.3 | 57.2 | 58.2 | 59.2 | 59.7 |
| 15 | 52.2 | 53.1 | 54.1 | 55.0 | 56.0 | 57.0 | 58.0 | 58.9 | 59.4 |
| | 51.9 | 52.9 | 53.8 | 54.8 | 55.8 | 56.7 | 57.7 | 58.5 | 59.0 |
| 17 | 51.7 | 52.Q | 53.6 | 54.5 | 55.5 | 56.4 | 57-4 | 58.3 | 58.8 |
| 18 | 51.4 | 52.3 | 53.3 | 54.2 | 55 2 | 56.1 | 57.1 | | 30. |
| 19 | 51.1 | 52.0 | 53.0 | 53.9 | 54.8 | 55.8 | 56.7 | 57.7 | 58.2 |
| 20 | 50.8 | 51.7 | 52.6 | 53.6 | 54.5 | 55.5 | 56.4 | 57.3 | 57.8 |
| 21 | 50.4 | 51.4 | 52.2 | 53.2 | 54.1 | 55.1 | 56.0 | 56.9 | 57.4 |
| 22 | 50.1 | 51.0 | 51.9 | 52.7 | 53.8 | 54.7 | 55.6 | 56.5 | 57.1 |
| 23 | 49.7 | 50.6 | 51.5 | 523 | 53.4 | 54.3 | 55.2 | | 56.6 |
| 24 | 49.3 | 50.2 | 51.1 | 52.1 | 53.0 | 53.9 | 54.8 | 55.7 | |
| 25 | | | 50.7 | 51.7 | 52.6 | 53.5 | 54.4 | 55.3 | 55.7 |
| 26 | | 49.4 | 50.3 | 51.2 | 52.1 | 53.0 | 53.9 | 54.8 | 55.2 |
| 27 | - | 490 | 49.9 | 50.8 | 51.7 | 52.6 | 53.5 | 54.3 | 54.8 |
| 28 | 1000 1000 1000 | 48.6 | 49-4 | 50.3 | 51.2 | 52.1 | 53.0 | 53.8 | 54.3 |
| 29 | 47.2 | 48 1 | 49.0 | 49.9 | | 51.6 | | 53.3 | .53.8 |
| 30 | | | 48.5 | 49.4 | 50.2 | 51.1 | 52.0 | | 53.3 |
| 31 | 46 3 | 47.1 | 48.0 | | 49.7 | 50.6 | | | 52.7 |
| 32 | | | | 48.3 | 49.2 | 50.0 | 50.9 | 51.7 | 52.0 |
| 33 | 45.3 | 46.1 | 47.0 | 47.8 | 48 6 | 49.5 | 50.3 | | 51.5 |
| 34 | | | 46.4 | 47.3 | 48.1 | 48.9 | 49.7 | 50.7 | 51.1 |
| 39 | 44-2 | 45.1 | 45.9 | 46.7 | 47.5 | 48.3 | 49.1 | 50.0 | 50.4 |
| | | | 1 | _ | 46.9 | | 48.5 | | 49.7 |
| 37 | 43.1 | 43.9 | 44-7 | | | | 47.9 | | 49.1 |
| 38 | | 43.3 | | | 45.7 | | | 48.1 | 48.5 |
| 1 39 | | | | | | | 46.6 | 47.4 | 47.8 |
| 4 | | 42.1 | | 43.7 | 44.4 | | 46.0 | 46.7 | 47.1 |
| 4 | | 41.5 | | 43.0 | | 44.5 | 46.3 | 46.0 | |
| 4 | | | | 42.4 | 43.1 | | | 45.3 | 45.7 |
| 4 | 3 39.5 | | | | | | | | 45.0 |
| 4 | 4 38.8 | 39.6 | | | | 42.4 | | 43.9 | |
| 1_4 | 38. | 1 38.9 | 139.6 | 140.3 | 0 2 | 41.7 | 142.0 | 143. | 1 73.7 |

284 Table of the Moon's Parallax in Altitude.

| Moon's | | | he Mo | | lorizor | | | | ENLE) |
|----------|------|-------------------|-------|------|---------|-----------|--|------|-------|
| ap. Alt. | 541 | 55'1 | 561 | 57' | 581 | 591 | 601 | 611 | 61/1 |
| 46 | 37.5 | 38.2 | 38.9 | 39.6 | 40.3 | 41.0 | 41.7 | 42.4 | 42.7 |
| 47 | 36.8 | 37-7 | 38.2 | 38.9 | 39.6 | 40.2 | 40.9 | 41.6 | 41.0 |
| 48 | 36.1 | 36.8 | 37-5 | 38.i | 38.8 | 39.5 | 40.1 | 40.8 | 41.1 |
| 49 | 35.4 | 36.1 | 36.7 | 37.4 | 38.1 | 38.7 | 39.4 | 40.0 | 40. |
| 50 | 34-7 | 35.4 | 36.0 | 36.6 | 37-3 | 37.9 | 38.6 | 39.2 | 39. |
| 51 | 34.0 | 34.6 | 35.2 | 35.9 | 36.5 | 37.1 | 37.8 | 38.4 | 38.7 |
| 52 | 33-3 | 33.9 | 34.5 | 35:1 | 35.7 | 36.3 | 36.9 | 37.6 | 38.0 |
| | 32.5 | 33.1 | 33.7 | 34.3 | 34.9 | 35.5 | 36.1 | 36 7 | 37-1 |
| 53 | 31.7 | 32.3 | 32.9 | 33.5 | 34.1 | 34.7 | 35.3 | 35.9 | 36.2 |
| 54 | - | _ | - | | | 33.8 | | | _ |
| 55 | 31.0 | 31.5 | 32.1 | 32.7 | 33 3 | | 34.4 | 35.0 | 35.3 |
| 56 | 30.2 | 30.7 | 31.3 | 31.0 | 32.4 | 33.0 | 33.6 | 34.1 | 34.4 |
| 57 | 29.4 | 29.9 | 30.5 | 200 | | 32.1 | 32.7 | 33.2 | 33.9 |
| 58 | 28.6 | 29.1 | 29.7 | 30.2 | 30.7 | 31.3 | 31.8 | 32.3 | 32.6 |
| 59 | 27.8 | 28.3 | 28.8 | 29.4 | 29.9 | 30.4 | 30.9 | 31 4 | 31.7 |
| 60 | 27.0 | 27.5 | 28.0 | 28.5 | 29.0 | 29.5 | 30.0 | 30.5 | 30.8 |
| 61 | 26.2 | 20.7 | 27,1 | 27.6 | 28.1 | 28.6 | 29.1 | 29.6 | 29.9 |
| 62 | 25.4 | 25.8 | 26.3 | 26.8 | 27.2 | 27.7 | 28.2 | 28.6 | 28.9 |
| 63 | 24.5 | 25.0 | 25.4 | 25.9 | 26.3 | 26.8 | 27.2 | 27.7 | 28.0 |
| 64 | 23.7 | 24-1 | 24.5 | 25.0 | 25.4 | 25.9 | 26.3 | 26.7 | 27.0 |
| 65 | 22.8 | 23.2 | 23.7 | 24.1 | 24.5 | 25.0 | 25.4 | 25.8 | 26.1 |
| 66 | 22.0 | 22.4 | 22.8 | 23.2 | 23.6 | 24.0 | 24.4 | 24.8 | 25.1 |
| -67 | 21.1 | 21.5 | 21.9 | 22.3 | 22.7 | 23.0 | 23.4 | 23.8 | 24.1 |
| 68 | 20.2 | 206 | 21.0 | 21.4 | 21.7 | 22.1 | 22.5 | 22.9 | 23. |
| 69 | 19.4 | 19.7 | 20.1 | 20.4 | 20.8 | 21.1 | 21.5 | 21.9 | 22. |
| 70 | 18.5 | 18.8 | 19.1 | 19.5 | 19.8 | 20.2 | 20.5 | 20.9 | 21. |
| 71 | 17.6 | 17.9 | 18.2 | 18.6 | 18.9 | 19.2 | 19.5 | 19.8 | 20.0 |
| 72 | 16.7 | 17.0 | 17.3 | 17.6 | 17.9 | 18.2 | 18.5 | 18.8 | 19.0 |
| | 15.8 | 16.1 | 16.4 | 16.7 | 17.0 | 17.2 | 17.5 | 17.8 | 18. |
| 73 | 14.9 | 15.1 | 15.5 | 15.7 | 16.0 | 16.3 | 16.5 | 16.8 | 17. |
| 7.4 | 14.0 | 14.2 | 1 - | 14.8 | 15.9 | 15.3 | 15.5 | 15.8 | 16 |
| 75 76 | 13.1 | 13.3 | 13.6 | 13.8 | 14.0 | 14.3 | 14.5 | 14.8 | 14. |
| 77 | 12.1 | 12.4 | 12.6 | 12.8 | 13.0 | | 13.5 | 13.7 | 13. |
| 78 | 11.2 | 11.4 | 11.6 | 11.9 | 12.0 | 12.3 | 12.5 | 12.7 | 12. |
| | 10.3 | 10.5 | 10.7 | 10.9 | 11-1 | 11.3 | 11.5 | 11.7 | 11. |
| 79 | 9.4 | 9.6 | | 9.9 | 10.1 | 10.2 | 10.4 | 10.6 | 10. |
| 81 | | 8.6 | 8.8 | (Y | 9.0 | 200 5 100 | The state of the s | 9.6 | |
| | 8.5 | | 7.8 | 8.9 | 8.0 | 9.2 | 9.4 | 8.5 | 9 8. |
| 82 | 7.5 | 7.7 | 1.0 | 7.9 | 0.0 | 0 2 | 8.4 | 7.5 | 7. |
| 83 | .0.0 | 6.7 | 6.8 | 0.9 | 7.0 | 7.2 | 7·3
6.3 | 6.4 | 6. |
| 84 | 5.6 | 5.8
4.8
3.9 | 5.9 | 6.0 | 6.1 | 0.2 | 0.3 | 5.3 | 0. |
| 85
86 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | | 5. |
| 86 | 3.8 | 3.9 | 3.9 | 4.0 | | 4.1 | 4.2 | 4.3 | 4. |
| 87 | 2.8 | 2.9 | 3.0 | 3.0 | 3.0 | 3.1 | 3.2 | 3.3 | 3. |
| 88 | 1.9 | 1.9 | 20 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2. |
| 89 | 1.0 | 1.0 | | 1.0 | 1.0 | | | 1.1 | 0. |
| 90 | 0.0 | 0.0 | 0.0 | 0.0 | 100 | 10.0 | 0.0 | 0.0 | 10. |

TABLE XXVIII.

Of the Dip to be allowed, to reduce an Altitude taken, when an open Horizon cannot be seen; but only the apparent Intersection of the Sea and Land.

| Distance
of the
Land in | HE | eigl | nt q | f the |
|-------------------------------|-------|-------|------|-------|
| Sea Miles. | 10 | 17 | 27 | 139 |
| 4 | 22 | 138 | 61 | 88 |
| 1 2 | 11 | 19 | 30 | 44 |
| 4 | 8 | 13 | 20 | 29 |
| 1 | 6 | 10 | 15 | 72 |
| 11 | 5 | 8 | 12 | 18 |
| 11 | 5 4 3 | 7 | 11 | 15 |
| 2 | 3 | 5 | 8 | 12 |
| 21/2 | 3 | 5 5 4 | 7 | 10 |
| 3 | 3 | 4 | 6 | 8 |
| 31 | 3 | 4 | 6 | 7 |
| 4 | 3 | 4 | 5 | |
| 5 | 3 | 4 | 5 | 766 |
| 6 | 3 | 4 | 5 | 6 |

TABLE XXIX

Of the Length of the Knots of the Log-line for different Glasses.

| Seconds
of
Glass. | Length of Knots. | | | | | |
|-------------------------|----------------------------------|-----------------|--|--|--|--|
| | Feet. | In. | | | | |
| 24 | 40
41
43
45
46
48 | 0 | | | | |
| 25
26 | 41 | 8 | | | | |
| 26 | 43 | 4. | | | | |
| 27 | 45 | 0 | | | | |
| 28 | 46 | 8 | | | | |
| 29 | | 4 | | | | |
| 30 | 50 | 0 | | | | |
| 31 | . 51 | 8 | | | | |
| 31 | 53 | 4 | | | | |
| 33 | 55 | 0 | | | | |
| 34 | 56 | 8 | | | | |
| 35
36 | 56
58
60 | 4 0 8 4 0 8 4 0 | | | | |

| TAB. XXX. Of the Dominical Letters, Prime, and Epast. | | | | Of | | TA. XXXIII. Of Number of Months. | | |
|--|-------------------|--------|---------|------------|-----|-------------------------------------|----------------------------|-------------|
| Yrs. | Domin.
Letter. | Prime. | Epact | Moon's | | uth- | Moon's | January o |
| • • • • | | | | Days. | h | m, | Days. | February 2 |
| 1773 | CB | 7 8 | 6 | | 0 | | 16 | |
| 774 | A | 9 | | 1 . 3 | | 36 | | April 2 |
| 1776 | GF | 19 | 9 | Afternoon. | 3 | | | May 3 |
| 1777 | D | 11 | | ern | 4 | | 20 5 | June 4 |
| 1778 | c | 13 | | 4 | | 36 | 19 22 12 22 the Morning 51 | July 5 |
| 780 | _ | - | 23 | 1 th | 6 | 24 | | August 6 |
| 1781 | | 15 | 4 | . E 10 | 7 8 | | 25 ui quo S | September 8 |
| 1783 | E | 17 | 26 | South in | | . 48 | 25 q1 no | October 8 |
| 1784 | DE | 18 | - | - | - | 36 | 27 | November 10 |
| 1785 | | 19 | | ' 13 | | | 28 | |
| 1786
1787
1788 | G | 2 3 | 0 11 22 | 119 | | | 30 | December 10 |

To find the Moon's Age, Southing, and the Time of High-Water.

In Table XXX. find the Epact for the Year; then to the Epact add the Day of the Month, and the Number of the Month found in Table XXXII. The Sum, if less than 30, is the Moon's Age; if more, the Excess above 30 is the Moon's

Against the Moon's Age, in Table XXXI. is the Time of the Moon's Southing; to which if what the Sailors call, the Flowing, be added, it gives the Time of High-Water on the common Principles: But more accurate Methods will be shewn

in our Treatise on Navigation.

For

fik

Golden Number.

TABLE XXXIII.

For the ready finding the Day of the Month the New Moon will fall on, till the Year 1900, (and, confequently, the Moon's Age, for any Day,) by knowing the Golden Number.

| Go | January. New Moon. | February. | March. | April. | May. | June. | July. | August. | September. | Odober. New Moon. 2 1 2 8 2 15 4 2 13 1 2 0 2 17 0 25 4 2 | November. New Moon. 2 10 28 17 10 25 14 3 22 11 29 18 8 27 15 4 23 13 15 15 15 15 15 15 1 | December. |
|---|--|--|--|--|--|--|--|---------------------|---------------|---|--|---|
| Golden Number. | New M | New Moon. | March. New Moon. 29 9 7 7 6 2 2 2 2 8 27 7 6 24 23 3 22 2 | New Moon. | New Moon. | New Moon. | New Moon. | New Moon. | New Moon. | New M | New M | New Moon. |
| | | on. | on. | 10.00 | | | 0.53 | | 10 1 1 6 | oon. | oon. | on. |
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 | 29 | 28 | 29 | 28 | 27 | 20 | 25. | 24 | 12 | 22 | 20 | 20 |
| 2 | 29 18 8 20 15 4 23 12 1 20 9 27 17 6 25 13 3 21 11 | 28 17 6 25 14 3 22 10 1 18 8 26 15 4 23 12 17 20 9 | 19 | 28
17
5
25
15
3
21
10
29
7
26
15
5
22
15
5
26
15
5
26
15
16
17
20
17
20
17
20
17
20
20
20
20
20
20
20
20
20
20
20
20
20 | 27
17
5
25
14
3
20 | 26 16 3 23 13 1 19 8 27 17 5 24 13 3 20 10 29 18 6 | 25.
15
3
22
1-30
18
8
27
16
4
23
13
20 | 13 | 12 | 11 | 10 | 20
9
27
17
6
25
13
3
21
11
29
18
7
26
15
4
23
12 |
| 3 | 8 | 0 | 7 | 5. | 5 | 3 | 3 | | 1-30 | 29 | 28 | 27 |
| 4 | 20 | 25 | 27 | 25 | 25 | 23 | 22 | 20 | 19 | 18 | 17 | 17 |
| 5 | 15 | 14 | 16 | 15 | 14 | 13 | 12 | 10
29
17
6 | -8 | 8 | 6 | . 0 |
| 0 | 4 | 3 | 5 | 3 | 3 | 140 | 1-30 | 29 | 27
16
5 | 27 | 25 | 25 |
| 7 | 23 | 22 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |
| 8 | 12 | 10 | 12 | 10 | 10 | 8 | 8. | -0 | 5 | 4 | 3 | 13 |
| 9 | 1 | 11 | 1 | 29 | 29 | 27 | 27 | 25 | 13 | 23 | 22 | 2.1 |
| 10 | 20 | 18 | 20 | 19 | 18 | 17 | 10 | 15 | 13 | 13 | 11 | 11 |
| 4 | 9 | 8 | -8 | 7 | 0 | 5 | 4 | 4 | 20 | 1 | 29 | 29 |
| 2 | 27 | 20 | 27 | 20 | 25 | 24 | 23 | 22 | 20 | 20 | 18 | 18 |
| 3 | 17 | 15 | 17 | 15 | .15 | 13 | 13 | 11 | 10 | 9 | 8 | 7 |
| 4 | - | 4 | 0 | 5 | 4 | 3 | 2 | 1-30 | 29 | 28 | 27 | 20 |
| 5 | 25 | 23 | 24 | 22 | 29
18
6
25
15
4
22
11
1-30
20 | 20 | 20 | 1-30 | 29
17
6 | 17 | 15 | 15 |
| 0 | 13 | 12 | 13 | 12 | 11 | 10 | 9
28
18 | 8 | 0 | 0 | 4 | 4 |
| 7 | 3 | 4 | 3 | | 1-30 | 29 | 28 | 27
16 | 25 | 25 | 23 | 23 |
| 0 | 21 | 20 | 22 | 20 | 20 | 18 | 6 | 5 | 3 | 14 | 1.3 | 1-30 |

 $^{\circ}$

| TABLE XXXIV. For finding the Distance of Ob- | | | | | | | | | | | |
|--|-------|----------------|--------|---------------|--------|-------------------|--------|----------------|------------------|--|--|
| | | | | | | | | | | | |
| Fig | in | Heigh
in Fe | in. | Heig
in Fe | in | Height
n Feet. | in. | Height n Feet. | in | | |
| Feet. | Miles | 3 2 | Miles. | 3 5 | Miles. | er. | Miles. | 2 2 | Miles. | | |
| . 1 | 1.224 | 53 | 8.914 | 240 | 18.969 | 760 | 33 756 | 2250 | 58.083 | | |
| 2 | 1.732 | 56 | 9.163 | 245 | 19.165 | 780 | 34.197 | 2300 | 58.725 | | |
| 3 | 2.121 | 59 | 9.405 | 250 | 19.360 | 800 | 34/633 | 2350 | | | |
| 4 | 2 449 | 62 | 9.841 | 255 | 19.553 | 820 | 35.063 | 2400 | 60.600 | | |
| 6 | - | 68 | - | 265 | | 860 | 35.400 | 2450 | - | | |
| 7 | 3.239 | 71 | 10.097 | 270 | 20.119 | 880 | 36.323 | 2500 | 61.834 | | |
| 8 | 3.463 | 74 | 10.533 | 275 | 20.305 | 900 | 36.734 | 2600 | | | |
| 9 | 3.673 | 77 | 10.745 | 280 | 20.489 | 920 | 37.140 | 1650 | 63.035 | | |
| 10 | 3.872 | 80 | 10.952 | 285 | 20.671 | 940 | 37-541 | 1700 | 63.626 | | |
| 11 | 4.061 | 83 | 11.156 | 290 | 20.851 | 960 | 37.938 | 2750 | 64.213 | | |
| 12 | 4.242 | 86 | 11.355 | 295 | 21.030 | 980 | 38.332 | 2800 | 64.794 | | |
| 13 | 4-415 | 89 | 11.552 | 310 | 21.558 | 1000 | 38.721 | 2850 | 65.941 | | |
| 15 | 4.742 | 95 | 11.032 | 320 | 21.903 | 1060 | 39.866 | 2900 | 66.507 | | |
| 16 | 4.898 | 98 | 12.121 | 330 | 22.243 | 1000 | 40.426 | 3000 | 67.068 | | |
| 17 | 5.048 | 101 | 12.306 | 340 | 22.578 | 1120 | 40.978 | 3050 | 00 | | |
| 18 | 5.195 | 104 | 12.487 | 350 | 22.907 | 1150 | 41.524 | 3100 | 1.0 | | |
| 19 | 5.338 | 107 | 12,666 | 360 | 23.232 | 1180 | 42.062 | 3150 | | | |
| 20 | 5 476 | 110 | 12.842 | 370 | 23.553 | 1210 | 42.593 | 3200 | 60.268 | | |
| 21 | 5.611 | 113 | 13.016 | 380 | 23.869 | 1240 | 43.118 | 3350 | 69.807 | | |
| 22 | 5.743 | 110 | 13.188 | 390 | 24.181 | 1270 | 43.636 | 3300 | 70.342 | | |
| 23 | 5.872 | 119 | 13.357 | 410 | 24.489 | 1300 | 44.149 | 3350 | 70.873 | | |
| 25 | 6.122 | 125 | 13.690 | 420 | 25.004 | 1360 | 45.156 | 3450 | 71.923 | | |
| 26 | 6.243 | 128 | 13.853 | 430 | 25.391 | 1390 | 45.651 | 3500 | 72.443 | | |
| 27 | 6.362 | 131 | 14.015 | 440 | 25.684 | 1420 | 46.141 | 3550 | | | |
| 28 | 6.479 | 134 | 14-174 | 450 | 25.974 | 1450 | 46.629 | 3600 | 73-470 | | |
| 29 | 6.594 | 137 | 14.332 | 460 | 26.261 | 1484 | 47.106 | 3650 | 73-979 | | |
| 30 | 6.709 | 140 | 14 488 | 470 | 26.545 | 1510 | 47.581 | 3700 | 74.484 | | |
| 31 | 6.817 | 143 | 14.642 | 480 | 26.826 | 1540 | 48.052 | 3750 | 74 985
75-484 | | |
| 32 | 7.034 | 146 | 14-795 | 500 | 27.104 | 1570 | 48.517 | | 75 979 | | |
| 34 | 7.140 | 155 | 15.244 | 510 | 27.652 | 1630 | 19.436 | 3900 | 76.471 | | |
| 35 | 7:244 | 160 | 15.488 | 520 | 27.922 | 1660 | 49.889 | 3950 | 76.919 | | |
| 36 | 7.347 | 165 | 15.728 | 530 | 28.189 | 1690 | 5c.338 | 4000 | 77-445 | | |
| 37 | 7448 | 170 | 15.965 | 540 | 28.454 | 1720 | 50 782 | 4050 | 77.937 | | |
| 38 | 7.548 | 175 | 16.198 | 550 | 28.716 | 1750 | 51.223 | 4100 | 78.407 | | |
| 39 | 7.647 | 186 | 16.427 | | 28 976 | 1810 | 51.661 | 4150 | 79 358 | | |
| 40 | 7.744 | - | 16.654 | 570 | 29.233 | _ | 52.094 | | 79.829 | | |
| 41 42 | 7.840 | 190 | 17.098 | 580 | 29 489 | 1840 | 52.524 | 4250 | | | |
| 43 | 7-935 | 200 | 17.316 | 600 | 29.994 | 1900 | 53-374 | 4350 | 80.702 | | |
| 44 | 8.122 | 205 | 17.531 | 620 | 30.489 | 1930 | 53 793 | 4400 | 81.225 | | |
| 45 | 8.214 | 210 | 17 744 | 640 | 32.006 | 1960 | 44.210 | 4450 | 81.005 | | |
| 46 | 8.305 | 215 | 17-955 | 660 | 31.457 | 2000 | 54.761 | 4500 | \$2.143 | | |
| 47 | 8.394 | 220 | 18.162 | 680 | 31.930 | 2050 | 550:41 | 4550 | 82,598 | | |
| 48 | 8.483 | 225 | 18.366 | 700 | 32.396 | 2100 | 56.113 | 4600 | 83.501 | | |
| 49 | 8.570 | 230 | 18,569 | 720 | 32.855 | 2150 | 57.434 | 4700 | 83.949 | | |
| -50 | 0.058 | 235 | 18.770 | 7.40 | 33 300 | 112200 | 3/1434 | 1 4/00 | | | |

Fir Ful Lai Ne Fir

Full Laft New First

Full Laft New First

Full 1 Laft (New First ON. B Hours : the after

| TABLE X | XX | .V. | Of the Moon's Ph | ajes. | - |
|-----------------|------|------|------------------------------|---------------|-----|
| IANUARY, 1773. | D. | H. | JULY. | D. | H |
| Full Moon | 8 | 10 | Full Moon | 3 | 20 |
| Last Quarter . | 15 | 10 | Last Quarter . | 11 | 5 |
| New Moon | 22 | 10 | New Moon . | 19 | .6 |
| First Quarter | 30 | 7 | First Quarter . | 26 | 9 |
| FEBRUARY. | | | AUGUST. | 3 2 3 | |
| Full Moon | 7 | noon | Full Moon | 2 | 5 |
| Last Quarter . | 13 | 18 | Last Quarter . | 9 | 22 |
| New Moon | 21 | 1 | New Moon | 17 | 18 |
| | | | First Quarter . | 24 | 15 |
| | | | Full Moon | 31 | 16 |
| MARCH. | Qu'i | 100 | SEPTEMBER. | | A |
| First Quarter . | i | 4 | Last Quarter . | 8 | 16 |
| Full Moon | 8 | 111 | New Moon | 16 | 4 |
| Last Quarter | 15 | 3 | First Quarter . | -22 | 20 |
| New Moon | 22 | 17 | Full Moon | 30 | 6 |
| First Quarter | 30 | 22 | | 771 | |
| | 3- | | | - | - |
| APRIL. | , | | OCTOBER. | | 1. |
| Full Moon | 6 | 21 | Last Quarter | 8 | 10 |
| Last Quarter . | 13 | 13 | New Moon . | -15 | 14 |
| New Moon | 21 | 10 | First Quarter .
Full Moon | 22 | 5 |
| First Quarter . | 29 | 10 | Full Woon | 29 | 23 |
| MAY. | 800 | 1143 | NOVEMBER. | | 140 |
| Full Moon | 6 | 4 | Last Quarter . | 7 | 3 |
| Last Quarter . | 13 | noon | New Moon | 13 | 24 |
| New Moon | 21 | 2 | First Quarter | 20 | 16 |
| First Quarter . | 28 | 22 | Full Moon | 28 | 18 |
| JUNE. | 1001 | 702 | DECEMBER. | tooli
June | 7 |
| Full Moon . | 5 | noon | Last Quarter . | 6 | 18 |
| Last Quarter . | 11 | 13 | New Moon | 13 | 10 |
| New Moon | 19 | 17 | First Quarter . | 20 | 8 |
| First Quarter . | 27 | 1 4 | Full Moon | 28 | 13 |

N. B. In this Table, each Day begins at Noon, and the Hours are counted on till Noon, the next Day; agreeably to the aftronomical Way of counting Time.

P p

JANUARY,

त्रवाहरू द्वार वर्षः वर्षः सर्वे होत्वरमञ्जूष्ट

| ANUARY, 1774. | D. | H. | JULY. | D. | н. |
|-----------------|------|-----|--|-------|------|
| Last Quarter | 5 | | New Moon | 8 | 9 |
| New Moon | 11 | 21 | First Quarter | 16 | 5 |
| First Quarter | 19 | 3 | Full Moon | 22 | 19 |
| Full Moon | 27 | 6 | Last Quarter . | 29 | 20 |
| FEBRUARY. | | | AUGUST. | | |
| Last Quarter . | 3 | 15 | New Moon . | 7 | noon |
| New Moon | 10 | 9 | First Quarter . | 14 | 12: |
| First Quarten | 17 | 23 | Full Moon . | 21 | 3 |
| Full Moon | 25 | 22 | Last Quarter . | 28. | 12 |
| MARCH. | | | SEPTEMBER. | | |
| Last Quarter . | 4. | 22 | New Moon . | . 5 | 14 |
| New Moon . | 11 | | First Quarter . | 12 | 17 |
| First Quarter . | 19 | | Full Moon . | 19 | 13 |
| ull Moon . | 27 | 11 | Last Quarter . | 27 | 7 |
| APRIL. | | | OCTOBER. | GO TO | 1 |
| Last Quarter . | 3 | 5 | New Moon . | 5 | 3 |
| New Moon . | 10 | 12 | First Quarter . | 12 | noo |
| First Quarter | 18 | 15 | Full Moon | 19 | 2 |
| Full Moon . | 25 | 21 | Last Quarter - | 27 | 3 |
| MAY. | 100 | | NOVEMBER. | | - |
| Laft Quarter . | 2 | 12 | New Moon . | 3 | 15 |
| New Moon . | 10 | 3 | First Quarter | 10 | 1 7 |
| First Quarter . | 18 | 7 | Full Moon | 17 | 18 |
| Full Moon . | 25 | 5 | Last Quarter | 25 | 23 |
| Last Quarter | 31 | 20 | The state of the s | | _ |
| IUNE. | 1000 | No. | DECEMBER. | mal (| - |
| New Moon . | 8 | 18 | | 3 | 2 |
| First Quarter | 16 | | The same of the sa | 9 | 17 |
| Full Moon | 23 | 12 | Full Moon | 17 | 12 |
| Last Quarter . | 30 | 7 | | 25 | 17 |

First Full Last New

First Full Last New

JA Ne Fir Ful Laf

Fir Ful Laf

Nev First Full Last Nev

First Full Last New

| ANUARY, 1775 | D. | н. | JULY. | D. | н. |
|------------------------------|-------|-----------------|-----------------|-----|------|
| New Moon . | 1 | 13 | First Quarter . | 5 | 14 |
| irft Quarter . | 8 | 6 | Full Moon . | 11 | Mid. |
| full Moon . | 16 | 8 | Last Quarter . | 19 | 4 |
| aft Quarter | 24 | 7 | New Moon . | 27 | i |
| New Moon | 30 | 23 | | _ | |
| FEBRUARY. | | | AUGUST. | | |
| First Quarter . | 1 6 | 22 | First Quarter . | 1 4 | 2 |
| Full Moon . | 1 15 | 2 | Full Moon . | 10 | 19 |
| Last Quarter . | 22 | 18 | Last Quarter . | 17 | 15 |
| 0. 0. | | Han | New Moon . | 25 | 17 |
| MARCH. | | | SEPTEMBER. | | |
| New Moon | 1 , | | First Quarter . | 1 2 | 13 |
| First Quarter . | 1 8 | 16 | Full Moon | 9 | 3 |
| Full Moon . | 16 | 48.00 | Last Quarter | 16 | |
| | 24 | 19 | New Moon | 24 | 5 |
| Last Quarter .
New Moon . | | 3 | INEW INTOON . | 24 | 9 |
| New Moon | 30 | 20 | | _ | - |
| APRIL. | | 1 | OCTOBER. | | |
| First Quarter . | 1 | 11 | First Quarter | 1 | 22 |
| Full Moon . | 15 | 10 | Full Moon | 8 | 13 |
| Laft Quarter . | 22 | 9 | Last Quarter . | 15 | 1.23 |
| New Moon . | 29 | 8 | New Moon . | 24 | noor |
| | | | First Quarter . | 31 | 4 |
| MAY. | N UKU | die | NOVEMBER. | 1 | 1 |
| First Quarter . | 7 | 6 | Full Moon | 7 | 1 |
| Pull Moon | 14 | 21 | Laft Quarter . | 14 | 119 |
| Last Quarter | 21 | 14 | New Moon | 22 | 15 |
| New Moon | 28 | 23 | First Quarter . | 29 | |
| New Moon | - 20 | -3 | The Quarter | | - |
| JUNE. | 1 1 | of the state of | DECEMBER. | | 1 |
| First Quarter . | 6 | 23 | Full Moon . | 6 | |
| Full Moon | 13 | | Last Quarter . | 14 | |
| Laft Quarter . | 19 | 20 | New Moon . | 22 | 3 |
| New Moon . | 1 27 | 111 | First Quarter . | 28 | 1 20 |

| IANUARY, 1776. | D. | Н. | IL JULY. | D. | H. |
|-----------------|-------|------|-----------------|-------|-----|
| Full Moon . | 5 | 7 | Full Moon | 1 | 4 |
| Last Quarter | 13 | 13 | Last Quarter . | 7 | 14 |
| New Moon . | 20 | 15 | New Moon . | 15 | 4 |
| First Quarter . | 27 | | First Quarter . | 23 | 7 |
| | | | Full Moon . | 30 | 12 |
| FEBRUARY. | | | AUGUST. | | |
| Full Moon . | 4 | 2 | Laft Quarter . | 6 | 3 |
| Last Quarter . | 12 | 6 | New Moon . | 13 | 17 |
| New Moon | 19 | 1 | First Quarter . | 21 | 22 |
| First Quarter . | 25 | 19 | Full Moon . | 28 | 20 |
| MARCH. | | | SEPTEMBER. | | |
| Full Moon . | 4 | 21 | Last Quarter . | 4 | Mid |
| Last Quarter . | 12 | 20 | New Moon | 12 | 9 |
| New Moon | 19 | II | First Quarter . | 19 | 111 |
| First Quarter . | 26 | · Ic | Full Moon | 27 | 4 |
| APRIL. | , | | OCTOBER. | - | |
| Full Moon | 3 | 15 | Last Quarter . | 3 | 23 |
| Last Quarter | 11 | 3 | New Moon . | 12 | 4 |
| New Moon . | 17 | 21 | First Quarter . | 19 | 22 |
| First Quarter . | 25 | 3 | Full Moon . | 26 | 14 |
| MAY. | Tent. | Pirc | NOVEMBER. | | - |
| Full Moon . | 3 | 6 | Last Quarter . | 2 | 16 |
| Last Quarter | 10 | | New Moon | 10 | 21 |
| New Moon | 17 | | First Quarter . | 18 | 8 |
| First Quarter | 24 | 20 | Full Moon . | 25 | 1 |
| IUNE. | 1000 | Anii | DECEMBER. | rosty | |
| Full Moon . | 1 | 18 | Last Quarter . | 1 2 | 111 |
| Last Quarter | 8 | | New Moon | 10 | 13 |
| New Moon | 15 | 1 -/ | First Quarter | 17 | 16 |
| First Quarter | 23 | 110 | Full Moon . | 24 | 13 |

Ne Fir Ful

JA La Ne Fir Fu

Laft New First Foll Laft

Nev First Full Last

New First Full Last

New First Full Last

| ANUARY, 1777. | D. | н. | JULY. | D. | H. |
|-----------------|--------|-------|-----------------|--|------------|
| aft Quarter . | 1 | 9 | New Moon . | 4 | 13 |
| New Moon . | 9 | 3 | First Quarter . | 12 | 4 |
| Firft Quarter . | 16 | 10 | Full Moon . | 20 | i |
| Full Moon . | 23 | 4 | Laft Quarter . | 25 | noon |
| Laft Quarter . | 31 | 6 | | | |
| FEBRUARY. | | | AUGUST. | BR C | |
| New Moon . | 7 | 16 | New Moon . | 2 | 23 |
| First Quarter . | 14 | 9 | First Quarter . | 10 | 21 |
| Full Moon . | 21 | 21 | Full Moon . | 18 | 11 |
| | 100 | 21.75 | Last Quarter . | 25 | 5 |
| MARCH. | UT | 53. | SEPTEMBER. | FLAS | |
| Last Quarter . | 2 | 2 | New Moon | 1 | 111 |
| New Moon . | 9 | 3 | First Quarter | The state of the s | 14 |
| First Quarter | 15 | 19 | Full Moon | 16 | 21 |
| Full Moon | 23 | 15 | Last Quarter . | 23 | 111 |
| Last Quarter . | 31 | 17 | Dan Quarter . | -3 | 1 |
| Can Quarter . | 3. | | | TIK | - |
| APRIL. | ncal | 11.0 | OCTOBER. | | 1 |
| New Moon . | 7 | 13 | New Moon . | 1 | 3 |
| First Quarter . | 14 | 6 | First Quarter . | 16 | 7 6 |
| Full Moon . | 22 | 8 | Full Moon . | | Marie Land |
| Last Quarter . | 30 | 5 | Last Quarter . | 22 | 22 |
| 1352 | | 2 | New Moon | 30 | 21 |
| MAY. | atest | | NOVEMBER. | 1 | |
| New Moon . | 6 | 21 | First Quarter . | 7 | 22 |
| First Quarter . | 13 | 20 | Full Moon . | 7 | 16 |
| Full Moon . | 22 | | Last Quarter . | 21 | Mid |
| Last Quarter | 29 | 15 | New Moon . | 29 | 15 |
| 3410 | -9 | | | -9 | |
| JUNE. | 8716 U |) had | DECEMBER. | 300 | |
| New Moon . | . 5 | 4 | First Quarter . | 6 | 22 |
| First Quarter | 12 | 11 | Full Moon . | 14 | 2 |
| Full Moon . | 20 | 13 | Last Quarter . | 21 | 5 |
| Last Quarter . | 27 | 119 | New Moon . | 1 29 | 10 |

| JANUARY, 1778. | D. | H. | JULY. | D. | Н. |
|-----------------|------------|-------|-----------------|------|-------|
| First Quarter . | 5 | 17 | First Quarter . | 1 | 4 |
| Pull Moon . | 12 | 13 | Full Moon . | 9 | 7 |
| Laft Quarter . | 20 | i | Last Quarter . | 16 | 20 |
| New Moon . | 28 | 2 | New Moon . | 24 | 11 |
| man 20 1 | 18U | Lines | First Quarter . | 30 | 19 |
| FEBRUARY. | | | AUGUST. | | |
| First Quarter . | 4 | 1 4 | Full Moon . | 7 | 21 |
| Full Moon . | 11 | 2 | Last Quarter . | 15 | 3 |
| Last Quarter . | 18 | 22 | New Moon | 21 | 21 |
| New Moon . | 26 | 16 | First Quarter . | 29 | 13 |
| MARCH. | CO POPULAR | | SEPTEMBER. | | |
| First Quarter . | 5 | 13 | Full Moon . | 16 | 10 |
| Full Moon . | 12 | 16 | Last Quarter . | 13 | 8 |
| Laft Quarter . | 20 | 18 | New Moon . | 20 | 8 |
| New Moon | 28 | 4 | First Quarter . | 28 | 7 |
| APRIL. | | | OCTOBER. | | |
| First Quarter . | 4 | 19 | Full Moon . | 5 | 21 |
| Full Moon . | 11 | 8 | Last Quarter | 12 | 14 |
| Last Quarter . | 19 | 12 | New Moon . | 119 | 23 |
| New Moon . | 26 | 13 | First Quarter . | 28 | 3 |
| MAY. | posts | | NOVEMBER. | 1 | |
| First Quarter . | 3 | 4 | Full Moon . | 5 | 8 |
| Full Moon . | 11 | noon | | 10 | 23 |
| Last Quarter . | 19 | 2 | New Moon . | 18 | 14 |
| New Moon . | 25 | 21 | First Quarter . | 26 | 20 |
| JUNE. | prop | 1.00 | DECEMBER. | 1. 1 | 2 110 |
| First Quarter . | 2 | 14 | Full Moon . | 2 | 18 |
| Full Moon . | 9 | 16 | Last Quarter | 10 | 10 |
| Last Quarter . | 17 | 13 | New Moon . | 18 | 10 |
| New Moon . | 24 | 1 | First Quarter . | 26 | 11 |

JAN Foll Laft New First Full

Laft New First

Fall Laft New First Fall

Last New First Full

Laft New First Full

Laft New First Fall

| ANUARY, 1779 | D. | H. | JULY. | D. | н. |
|-----------------|-------|--------|---|---------|------|
| full Moon . | 2 | 4 | Laft Quarter . | 6 | 10 |
| Laft Quarter | 9 | 1.7 | New Moon | 13 | 4 |
| New Moon . | 17 | A | First Quarter . | 20 | 10 |
| First Quarter | 24 | 23 | Full Moon . | 28 | 3 |
| Full Moon | 31 | 15 | | - | .) |
| FEBRUARY. | | | AUGUST. | | |
| Last Quarter . | 7 | 19 | Last Quarter . | | 20 |
| New Moon | 15 | 23 | New Moon . | 4 | 11 |
| First Quarter . | 23 | | First Quarter . | 18 | 11 |
| The Quarter . | 1 3 | 9 | Full Moon . | 26 | 15 |
| | - | - | 000 | | |
| MARCH. | | 1 | SEPTEMBER. | 120 | 1 |
| Full Moon | 2 | 1 | Last Quarter . | 3 | 5 |
| Last Quarter | 9 | 4 | New Moon . | 9 | 20 |
| New Moon . | 17 | 14 | First Quarter . | 17 | 4 |
| First Quarter . | 24 | 15 | Full Moon . | 25 | 6 |
| Full Moon . | 31 | 14 | | | - |
| ER. | 280 | 9 | COMOTHE | A STATE | |
| APRIL. | | | OCTOBER. | 17 | |
| Last Quarter . | 16 | 10 | | 2 | 6 |
| New Moon | | 3 | New Moon . | 9 | 0.0 |
| First Quarter | 22 | 22 | First Quarter . | 16 | 23 |
| Full Moon . | 30 | 3 | Full Moon . | 24 | 18 |
| 1,998 | 111 | N | Last Quarter . | 31 | 18 |
| MAY. | 1,000 | i ha | NOVEMBER. | | N to |
| Last Quarter . | 8 | 4 | New Moon | 8 | 5 |
| New Moon . | 15 | 13 | First Quarter . | 15 | 19 |
| firft Quarter . | 22 | 4 | Full Moon . | 23 | 10 |
| Full Moon | 29 | 17 | Last Quarter . | .30 | 2 |
| 11 6 2 6 | ones. | Jane . | E1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2000 | (0) |
| JUNE. | MOV! | Lia | DECEMBER. | 3100 | 2 |
| Last Quarter | 6 | | New Moon . | 7 | 11 |
| New Moon . | 13 | | First Quarter . | 115 | 211 |
| First Quarter . | 20 | 12 | Full Moon . | 2.2 | 20 |
| Fall Moon . | 28 | 8 | Last Quarter . | 1 29 | 11 |

| IANUARY, 1780. | D. | н. | JULY. | D. | Н |
|-----------------|----------|-------|-----------------|-----|----|
| New Moon . | 5 | 4 | New Moon . | 1 | 20 |
| First Quarter . | 14 | 8 | First Quarter . | 8 | 16 |
| Full Moon | 20 | 13 | Full Moon . | 16 | 12 |
| Last Quarter . | 27 | 23 | Laft Quarter . | 24 | 4 |
| | | | New Moon | 31 | 5 |
| FEBRUARY. | | | AUGUST: | | |
| New Moon . | 4 | 23 | First Quarter . | 6 | 20 |
| First Quarter | 13 | 0 | Full Moon . | 14 | 16 |
| Full Moon . | 19 | 16 | Laft Quarter . | 22 | 18 |
| Last Quarter . | 26 | 19 | New Moon . | 29 | 12 |
| MARCH. | | | SEPTEMBER. | | |
| New Moon . | 5 | 17 | First Quarter . | 5 | 6 |
| First Quarter . | 13 | 11 | Full Moon | 13 | 9 |
| Full Moon . | 20 | 2 | Last Quarter . | 21 | 5 |
| Last Quarter . | 27 | 7. | New Moon | 27 | 20 |
| APRIL. | | | OCTOBER. | | |
| New Moon . | 4 | 10 | First Quarter | -4 | 21 |
| First Quarter . | II | 20 | Full Moon . | 13 | 1 |
| Full Moon . | 18 | 13 | Last Quarter . | 20 | 16 |
| Last Quarter . | 26 | ani | New Moon . | 27 | 6 |
| MAY. | of and | Es. | NOVEMBER. | - | |
| New Moon . | 4 | - | First Quarter . | 3 | 15 |
| First Quarter | 11 | 2 | Full Moon | 11 | 17 |
| Full Moon . | 17 | 23 | Last Quarter . | 18 | 23 |
| Last Quarter . | 26 |) A | New Moon . | 27 | 4 |
| IUNE. | 5 1 A.A. | D-Mai | DECEMBER. | 1.0 | |
| New Moon | 2 | 12 | First Quarter . | 3 | 11 |
| First Quarter . | 9 | 5 | Full Moon | 11 | 8 |
| Full Moon . | 16 | 0 | Laft Quarter . | 18 | 6 |
| Last Quarter . | 24 | 4 | New Moon . | 25 | 8 |

TABLE XXXVI.

Of the Variation of the Compass for the Year 1756.

| | orth. | | tude: | | tude. | | tude. | Lat
20° N | itude.
Vorth |
|---|---|---|--|--|---|---------------------------------------|---|---------------------------------------|---|
| Lon.
W. | Var. | Lon.
W. | Var. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. |
| Deg. 5 10 15 20 25 30 35 40 45 50 E. | Deg. 1544 111 9 62 4 4 5 1 1 2 5 6 2 W. | Deg. 0 5 10 15 20 25 30 45 50 55 E. | Deg. 153 114411111 114 114 114 114 114 114 114 | Deg. 15 20 25 30 35 40 45 50 55 60 E. 50 | Deg. 10 8 5 2 3 1 E. 1 2 4 1 1 2 6 2 W. 10 2 | Deg. 20 25 30 35 40 45 50 65 70 75 80 | Deg. 9 12 14 14 14 15 15 1 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15 | Deg. 20 25 30 35 40 45 50 65 70 75 80 | Deg. 10 8 54 4 12 2 14 4 5 14 5 14 5 14 |
| 5
10
40
45
50
55
60
65
70
75
80
85
90 | 1621214 11214 114 114 114 114 114 114 114 | 5
19
45
55
60
65
70
75
80
85
90 | 16 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 55
60
65
70
75
80
85
90
95 | 8
6
4 ¹ / ₂
3
1
E. 0 ¹ / ₄
1
0 ¹ / ₂
W. 0 ¹ / ₂ | E. 59 55 60 65 70 75 80 95 | W. 977,44 4 22 20 0 E. 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | E. 60 65 70 90 | W. 6 41 21 E |

Table of Variation.

| _, , | forth. | | tude. | | orth. | | orth. | Latitude
45°Nort | |
|--|---|---|--|--|---|--|--|---|--------------------------------------|
| Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. |
| Deg. 20 25, 30 35 40 45 50 55 60 65 70 75 80 E. 60 65 70 | Deg. 11 977 77 77 77 77 77 77 77 77 77 77 77 77 | Deg. 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 | Deg. 1344 12 104 12 104 4 3 14 11 1 10 0 0 | Deg. 10 15 20 25 30 35 40 45 50 55 70 75 | Deg. 144 134 134 134 104 14 14 14 14 15 15 14 6 6 7 | Deg. 10 15, 20 25 30 35 40 45 50 65 70 | Deg. 15 141 131 131 121 131 113 113 113 113 113 11 | Deg. 5 10 15 20 25 30 35 40 45 50 55 60 | Deg 16 16 16 16 15 15 15 15 16 17 18 |

| | orth. | | tude.
outh. | | outh. | | outh. | Latin
20° S | tude. |
|--------------------|--------------------|--|------------------------------------|---|--|---|---|--|---|
| Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. |
| Deg. 5 10 15 20 25 | Deg. 194 20 201 21 | Deg. 0 5 10 15 20 25 30 35 E. 5 10 40 45 50 65 70 75 80 85 90 95 100 | W. 16 17 16 12 34 4 1 3 1 0 E. 034 | Deg. 0 5 10 15 20 25 30 35 E. 5 10 15 40 45 50 65 70 75 80 85 90 95 100 105 110 | Deg. 144 124 104 144 10 144 14 | Deg. 0 5 10 15 20 25 30 35 40 E. 5 10 40 45 50 65 70 75 80 85 90 95 100 105 | Deg. 14 12 91 7 4 1 E. 2 42 16 2 19 16 4 12 2 3 3 3 3 3 4 | Deg. 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 | Deg. 1312 8 4 5 5 7 2 2 2 1 4 4 2 2 2 1 4 4 4 4 4 4 4 4 4 4 |

Table of Variation.

| | tude. | Lati | tude. | Lati | tude. | Lati
40° S | tude. |
|---|---|--|---|----------------------------|---|--|---|
| Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var.
W. | Lon.
W. | Var. |
| Deg. 0 5 10 15 20 25 30 35 | Deg. 124 10 7 12 14 2 3 4 E. 1 3 2 6 | Deg.
0
5
10
15
20
25
30
35 | Deg. 114 9 64 3 2 2 4 2 2 2 4 2 2 2 2 4 2 | Deg. 0 5 10 15 20 25 30 35 | Deg. 10334-11-12 5-12-12-12-12-12-12-12-12-12-12-12-12-12- | Deg. 0 5 10 15 20 25 30 | Deg. 9 4 4 4 4 4 1 1 2 E. 1 4 4 6 1 2 |
| E. 50 15 35 40 45 50 65 79 75 80 85 90 95 100 | W. 144
16 174
2323
231
231
141
141
174
774
6 | E. | W. 1344
1512
18234
2444
2544
211
234
211
1044
1092
1092
9 | E. 5 | W. 13 15442 17 17 1944 17 17 194 17 17 17 17 17 17 17 17 17 17 17 17 17 | E. 55 10 15 20 25 30 35 40 45 50 55 50 65 70 580 | W. 12 121 17 1 17 20 12 12 12 12 12 12 12 12 12 12 12 12 12 |

BEN BEL BEC BEC

TABLE XXXVII.

A Tide-Table, shewing the Time of High-Water at New or Full Moon, commonly called, the Flowing.

| Names of Places. | Quartr | Countries. | Coafts. | Flo | w. |
|--------------------|--------|--------------|------------------|------------|----|
| A | | | | н. | м. |
| At Abbrevrack | Europe | France | English Channel | 1 | 30 |
| Aberdeen | Europe | Scotland | German Ocean | | 45 |
| Aldborough | | England | German Ocean | | 45 |
| I. Alderney | | England | English Channel | 0 | 0 |
| R Amaz. Mouth | | | Atlantic Ocean | 6 | 0 |
| I. Ameyland | Europe | Dutchland | German Ocean | 7 | 30 |
| Amsterdam | | Dutchland | German Ocean | 3 | 0 |
| St. Andrews | | Scotland | German Ocean | 2 | 15 |
| | | Flanders | R. Scheld | 6 | 0 |
| I. Anholt | | Denmark | Sound | 0 | 0 |
| Archangel | Europe | | White-Sea | 6 | 0 |
| I. Arrah | | Ireland | St. Geo. Channel | | 0 |
| R. Afhley | | Carolina | Atlantic Ocean | 26- | 45 |
| St. Augustine | | Florida | Atlantic Ocean | | 30 |
| В. | | | | 1 | |
| Baltimore | Europe | Ireland | Western Ocean | 4 | 30 |
| C. Barfleur | | France | English Channel | | 30 |
| L de Bas | Europe | | English Channel | | 45 |
| Bayonne | Europe | | B. Bifcay | | 30 |
| Beachy-Head | | England | English Channel | 0 | 0 |
| North & S. Bear | | | Hudson's Bay | 0 | 0 |
| Belfaft | | Ireland | Irish Sea | 10 | 0 |
| Bellifle | Europe | | B. Bifcay | 3 | 30 |
| I. Bermudas | | Bahama Isles | Atlantic Ocean | 7 | 0 |
| Berwick | | England | German Ocean | | 30 |
| I. de Bic | Amer. | Acadia | R. St. Laurence | 2 | 0 |
| Bideford* | | England | Briftol Channel | 6 | 0 |
| Blackney | | England | German Ocean | 6 | 0 |
| C. Blanco | | Negroland | Atlantic Ocean | man of the | 45 |
| | Europe | | English Channel | 0 | 0 |
| Blavet or P. Louis | Enrope | France | B. Bifcay | 3 | 0 |
| C. Bojador | Africa | Negroland | Atlantic Ocean | 0 | 0 |

Na

Dai St. Die Do Do Du Du Du Du Du

> Ed Ed R. En En En

> > Fa FL C. Fl I. No Fo

| Names of Places. | Quartr | Countries. | Coafts. | Flo | w. |
|--------------------------------|-----------|---------------|--|-----|----|
| | 41. | | A STATE OF THE STA | H. | M. |
| C.Bon. Esperance | Africa | Caffers | Indian Ocean | 3 | 0 |
| Bourdeaux | Europe | France | B. Bifcay | 3 | 0 |
| Boulogne | | France | English Channel | | 20 |
| Bremen | | Germany | R. Wafer | 6 | 0 |
| BreeSound, aSand | | Dutchland | German Ocean | 4 | 30 |
| Breft | Europe | | B. Bifcay | 3 | 45 |
| Bridlington Bay | | England | German Ocean | 1 | 30 |
| Briftol* | | England | Briftol Channel | 7 | 4 |
| Buchaness | | Scotland | German Ocean | 3 | 0 |
| Button's Isles | | New-Britain | Hudfon's Straits | 6 | 50 |
| Bridgewater* | | England | Bristol Channel | 6 | 40 |
| Cadiz | Europe | Spain | Atlantic Ocean | 4 | 30 |
| Caen | | France | English Channel | 9 | 0 |
| Calais | | France | English Channel | | 30 |
| I. Caldy | | England | St. Geo. Channel | 5 | 15 |
| Camfer, a Sand | | Dutchland | German Ocean | i | 30 |
| I. Canaria | Africa | Canaries | Atlantic Ocean | 3 | 0 |
| C. Cantin | | Barbary | Atlantic Ocean | 0 | 0 |
| Caskets | Europe | I. Guernsey | English Channel | | 15 |
| Cathness Point? | A Part of | 302 23 1 Long | 0 | 1 | , |
| or Dinnet- | Europe | Scotland | Western Ocean | 9 | 0 |
| Charles-Town
East and West? | Amer. | Carolina | Ashley River | 3 | 0 |
| End of Char- | Amer. | Labradore. | Hudson's Straits | 10 | 15 |
| Cheignecto | Amer. | Nova Scotia | B. Fundy | 0 | 45 |
| Cherbourg | | France | English Channel | | 30 |
| C. Churchill } | 100112 32 | New-Wales | Hudson's Bay | 7 | 20 |
| C. Clear | Europe | freland | Western Ocean | 4 | 30 |
| Concarneau | | France | B. Bifcay | 3 | 0 |
| Conquet | | France | English Channel | | 15 |
| I. Coquet | | England | German Ocean | | 0 |
| Corke | | Ireland . | St. Geo. Channel | 3 | 30 |
| C. Corfe | Africa | Guinea | Eth. Sea | 3 | 30 |
| Cromer | | England | German Ocean | 7 | 0 |

| Names of Places. | Quartr | Countries. | Coafts. | Flow. |
|--|----------|--------------|------------------|--------|
| D. | - | * | | Н. М. |
| and the same of th | Europe | England | English Channel | 6 30 |
| St. David's Head | | | St. Geo. Channel | 6 6 |
| Diepe | | France | English Channel | 10 30 |
| Dort | | Dutchland | German Ocean | 3 0 |
| Dover | | England | English Channel | 11 39 |
| Downs | | England | German Ocean | 1 19 |
| Dublin Bar* | | Ireland | Irish Sea | 10 30 |
| Dunbar | | Scotland | German Ocean | 2 30 |
| Dundee | | Scotland | German Ocean | 2 10 |
| Dungarvan | | Ireland | Atlantic Ocean | 4 30 |
| Dungenes | | England | English Channel | 9 49 |
| Dunkirk | | France | German Ocean | 0 |
| Dunnose | Europe | I. Wight | English Channel | 9 4 |
| Chamell o . o | filton H | 30217 | ic Grace, Kurope | |
| Channa E | dilyo M | bosload | as Free Banapal | BOLLY |
| Edinburgh | Europe | Scotland 137 | German Ocean | 4 30 |
| Edyftone 1000 | | England | English Channel | 5 30 |
| R. Elbe Mouth | | Germany , | German Ocean | 0 |
| Embden | | Germany | German Ocean | 0:0 |
| k. Emes Mouth | | Germany | German Ocean | 7 3 |
| Enchyfon 2000 | | Dutchland | Zuyder Sea | 0 |
| Estaples | | France | English Channel | 11 |
| Exmouth Bar* | | England | English Channel | 6 1 |
| o officials of | baha ik | miatel M | STORY OF SO | 00 a |
| o d Freedo | recht. | Men loanite | remark s'that w | 13-150 |
| Falmouth | Europe | England | English Channel | 5 30 |
| Flamborough Hd | Europe | England | German Ocean | 4 |
| C. Florida | Amer. | Florida | G. Mexico | 7 3 |
| Flushing | Europe | Dutchland | German Ocean | 0 4 |
| I. Fly | | Dutchland | German Ocean | 7 3 |
| North Foreland | Europe | England | German Ocean | 9 4 |
| South Foreland | | England | English Channel | 9 4 |
| Foulness 20 3 | Europe | England | German Ocean | 6 4 |
| Foye | Europe | England | English Channel | 5 1 |
| | | | | 1 |
| G. G. | 30. Opt | England - | End . Day ope | |
| R. Garonne | Europe | France | B. Bifcay | 3 |
| Gafpey Bay of | | Acadia | G. St. Laurence | |
| Gibraltar | Europe | | Mediter. Sea | 0 |
| | Europe | France | English Channel | 77 |

| Names of Places. | Quartr | Countries. | Coafts. | Flo | w. |
|-----------------------|--------|--|-------------------|------|----|
| Graveline / | Europe | France | English Channel | 0 | 0 |
| Gravefend | Europe | England | R. Thames | | 30 |
| Groin or C.Co- | Europe | Spain | B. Biscay | 3 | 0 |
| I. Guernsey | Europe | England | English Channel | 1 | 30 |
| H.
Halifax | Amer | Name Cassia | Western Ocean | T. | |
| | | Nova Scotia
Germany | R. Elbe | 6 | 30 |
| Hamburgh
Hare life | | Canada | R. St. Laurence | | 0 |
| Harlem | | Dutchland | German Ocean | 3 | - |
| Hartlepool | | England | German Ocean | | 0 |
| Harwich | Europe | England | German Ocean | | |
| Havre de Grace | Europe | France | English Channel | 11 | - |
| Helford 18 Feet | | England | English Channel | 5 | 15 |
| | Amer. | New Wales | Hudfon's Bay | 0 | 0 |
| C. Henry | | Virginia | Atlantic Ocean | | 15 |
| Holyhead | Europe | Wales | Irifh Sea | | 30 |
| Harfleur | Europe | France | R. Seine | 9 | 0 |
| Hull | | England | R. Humber | 6 | 0 |
| R.Humb.Entran. | Europe | England | German Ocean | 5 | _ |
| i o I. arefu | | S Land Trial | genull *34.15 da | GE I | - |
| Ice Cove | | N. Main | Hudson's Straits | 10 | 0 |
| Fort St. John's | | Newfoundld | Atlantic Ocean | 6 | 0 |
| St. John de Luz | | France | B. Bifcay | | 30 |
| Port St. Julian | Amer. | Patagonia | S. Atlantie Ocean | 4 | 45 |
| Kentish Knock ? | Europe | England | German Ocean | ò | 0 |
| I. Kilduin | Europe | Lapland | North Ocean | 7 | 30 |
| Kinsale masso a | Europe | Ireland | Atlantic Ocean | 5 | 15 |
| L. | | The state of the s | | | |
| Land's End | Europe | England | St. Geo. Channel | 5 | 30 |
| . Lambay | Europe | Ireland | Irish Sea | | 15 |
| Leith | Europe | Scotland | German Ocean | 4 : | 30 |

| Names of Places. | Quartr | Countries. | Coafts. | Flow. |
|--|----------------------------|--|---|---------------|
| And where I have | wayin ji | | | H. M. |
| Leoftoff | Europa | England | German Ocean | 9 45 |
| Liverpool* | Europe | England | Irish Sea | 11 0 |
| I.Lewes, N. Point | Europe | Scotland | Western Ocean | 6 30 |
| Lime | | England | English Channel | 7 0 |
| Lisbon | Europe | Portugal | R. Tagus | 2 15 |
| Lizard | Europe | England | English Channel | 7 30 |
| R. Loire Entrance | Europe | France | B. Biscay | 3 0 |
| London* | | England | R. Thames | 2 8 |
| New-London | | New England | | 1 30 |
| Long Ifle | | New England | Western Ocean | 3 0 |
| Longfand-Head | | England | German Ocean | 10 30 |
| l. Lundy | | England | St. Geo. Channel | 5 45 |
| Lynn | | England | German Ocean | 6 6 |
| M. I. Ma- Funchal } deira W. End } R. Macs Mouth St. Maloes I. Man, W. End Margate Memissan | Burope
Europe
Europe | Canaries Dutchland France England England France | Atlantic Ocean { German Ocean English Channel Irish Sea English Channel Bay of Biscay | DOM: N. C. C. |
| Milford* | | | | 3 39 |
| Minehead* | Europe | Wales
Captand | St. Geo. Channel | 6 0 |
| Mounts Bay | Europe | England
England | St. Geo. Channel
English Channel | 4 30 |
| N. | | | 200 | latt O |
| Nantes | Europe | France | Bay of Bifcay | 3 4 |
| Naze | Europe | Norway | Western Ocean | 11 1 |
| Needles | Europe | England | English Channel | 10 1 |
| P. Nelson's Shoals | | New Wales | Hudson's Bay | 8 20 |
| Newcastle | Europe | England | German Ocean | 3 1 |
| Nieuport | Europe | Flanders | German Ocean | 0 |
| Nore | Europe | England | R: Thames | 0 |
| N. Capel. Magoro | Europe | Lapland | North Ocean | 3 0 |
| l Nottinghm, & Pt | Amet. | New Britain | Hudfon's Straits | 10 |
| o. | - | | beeg2. | |
| Ollone | Europe | France | Bay of Biscay | 3 45 |
| Orfordness | Europe | England | German Ocean | 9 45 |

At the Isle of Man, the N. and S. Ploads meet each other.

| Names of Places. | Quartr | Countries. | Coafts. | Flow. |
|------------------------------|----------|-----------------------|--|---------|
| Orkney-Isles, | Europe | Scotland | Western Ocean | |
| Between Rowsa | 2-11 | B = dexe | TAST INTO MAN | H.M. |
| and Westra | N. Villa | The same of | | 10 30 |
| Between Shapstra | | | | |
| and Stronfa . | 000 | | A STATE OF THE STA | II C |
| At the East End | | the state of the same | | |
| of Copensha. Between S. Wo- | AND A | - Agric - 0.40 / 12 | dendaria montologi | 11 30 |
| na and Stroma | 111 | a state of | 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | * mil |
| Isles, in Pit- | | 1 mm 20 / 12 | Page 21 4 125 4 474 | and the |
| land Firth | 13 JULY | Top to what | Children Vill | 11 30 |
| Rofeness | Military | | Land in | 10 30 |
| Duncaniby Head | - | | | 8 19 |
| Oftend | Europe | Flanders | German Ocean | 40 0 |
| P. | | A Can with the | | |
| Padflow 30 Feet | Europe | Ragland* | St. Geo. Channel | 5 45 |
| St: Paul de Leon | Europe | France | English Channel | |
| Placentia | | Newfoundld | Atlantic Ocean | 9 0 |
| Penzance 19 Feet | Europe | England* | Sr. Geo. Channel | 4 30 |
| Plymouth | Europe | England | English Channel | 6 0 |
| Portland | Europe | England | English Channel | 8 15 |
| Portfmouth- | Europe | England | English Channel | PI 15 |
| Q. | 70 | | | 23 |
| Quebec | Amer. | Canada | R. St. Laurence | 7 30 |
| 10000 | 14.41 | 20 0 pt 6 9 | | 1 |
| R. | | ti . | | |
| I. Ree | | France | B. Bifcay | 3 0 |
| Robin Hood's Bay | | | German Ocean | 3 0 |
| Rochefort | | France | B. Bifcay | 4 15 |
| Rochelle
Rochefter | Europe | France | B. Biscay | 3 45 |
| Rotterdam | Rusope | England
Dutchland | R. Medway
German Ocean | 0 45 |
| Rouen | | France | R. Seine | 3 0 |

In Holm Sound, Velocity is 6 Miles an Hour on Spring, and 2 Miles on Neap, Tides. South Wona Island, Velocity of Miles on Spring, 3 Miles on Neap. At N. E. of the Lewes, Tide runs not above 2 Miles an Hour.

| Names of Places. | Quartr | Countries. | Coasts. | Fle | ow. |
|---------------------------|---|------------|------------------|-----|-----|
| | - 1 | | | H. | M. |
| Rye. | Europe | England | English Channel | | |
| I. Saddleback | Amer. | North Main | Hudson's Straits | 10 | 0 |
| I. Sal- supper a lower | Amer. | North Main | Hudion's Strts | 9 | 10 |
| Sandwich | Europe | England | Downs | 11 | 30 |
| Scarboro' Head | | England | German Ocean | 3 | 45 |
| Scilly Ifles | | England . | St. Geo. Channel | 3 | 45 |
| R. Senegal | | Negroland | Atlantic Ocean | 10 | 30 |
| Seven Stones, } | Europe | England | St. Geo. Channel | 4 | 30 |
| R. Severn, Entr. | Europe | England | St. Geo. Channel | 6 | 0 |
| R. Seyne, Entr. | Europe | France | English Channel | 9 | 0 |
| Sheerness | Europe | England | R. Thames | 0 | 0 |
| Sierra Leona | Africa. | Guinea | Atlantic Ocean | 8 | 1,5 |
| Shillocks | Europe | Ireland | Western Ocean | 5 | 0 |
| I. Shetland, Li- | Europe | Scotland | Western Ocean | 3 | 0 |
| Shoreham | Europe | England | Inglish Channel | 10 | 30 |
| 1. Sky, N. and } S. Point | 4 1111111111111111111111111111111111111 | Scotland | Western Ocean | 5 | 30 |
| R. Somme | Europe | France | English Channel | 14 | 0 |
| Southampton | Europe | England | English Channel | 0 | 0 |
| Spurn | Europe | England | German Ocean | 5 | 15 |
| Start Point | Europe | England | English Channel | 6 | 45 |
| Stockton | Europe | England | German Ocean | 5 | 15 |
| Strangford Bay | Europe | Ireland | Irish Sea | 10 | 30 |
| Swin, a Sand | Europe | England | Ent. Thames | 0 | 0 |
| Sunderland* | | England | German Ocean | 3 | |
| Swanfey* | Europe | Wales | St. Geo. Channel | 6 | 0 |
| Tamarin Town | Africa | I. Sokotra | Indian Ocean | 9 | C |
| R. Tees Mouth | Europe | England | German Ocean | 3 | 0 |
| I. Teneriff | Africa | Canaries | Atlantic Ocean | 3 | |
| Terra Nieva | Amer. | North Main | Hudson's Straits | 9 | |
| Tervere | | Dutchland | German Ocean | 0 | - |
| I. Texel | | Dutchland | German Ocean | 7 | 30 |
| R. Thames Mout | | | German Ocean | 1 | 30 |
| Tinmouth | Europe | England | German Ocean | 13 | 0 |

| Names of Places. | Quartr | Countries. | Coafts. | Flo | w. |
|------------------|----------------------|-------------|------------------|-----------|-------|
| Topfham | Europe | England | English Channel | 6 | - 0 |
| Torbay | | England | English Channel | 5 | 15 |
| I. Tory | Europe | Ireland | Western Ocean | | 30 |
| V. | Rurana | Panas | Realife Channel | 21 | |
| St. Valery | Europe | | English Channel | 100 31 11 | - |
| Vannes | Europe | | B. Bilcay | | 45 |
| I. Ushant | Europe | France | English Channel | 4 | 30 |
| C. Walfingham | Amer | New-Britain | Hudson's Straits | 0 | |
| Watchet* | ASSESSED TO STATE OF | England | Bristol Channel | 6 | 7 |
| Waterford | | Ireland | St. Geo. Channel | - | 30 |
| Wells | | England | German Ocean | 11 | |
| Weymouth | | England | English Channel | 7 | 2 |
| Whitby | | England | German Ocean | 3 | 0 0 0 |
| I. Wight, E. End | Europe | England | English Channel | 0 | 7 |
| Winchelsea | | England | English Channel | | 45 |
| Wintertoness | | England | German Ocean | 9 | 43 |
| Whitehaven* | | England | St. Geo. Channel | | 45 |
| Yarmouth | Europe | England | German Ocean | 0 | 45 |
| York Fort | Amer. | New Wales | Hudion's Bay | | 10 |
| York, New | | | Atlantic Ocean | 9 | 0 |
| Youghall | | Ireland, | St. Geo. Channel | | 30 |
| Z. ** | Sieural | busierd | one Bay July | oh. | 213 |
| Zeric Sea | Europe | Dutchland | German Ocean | 3 | 0 |

Besides the Times of Flowing, in the preceding Table, the following Times, it is said, will serve for Coasts of considerable Extent, and nearly for the Places on those Coasts.

Finmark, or N. N. W. Coast of Lapland, th. 30m. Jutland

Isles, oh. om.

Friesland Coast, 7h. 30m. Zeland Coast, 1h. 30m. Flanders Coast, 6h. 6m. Picardy and Normandy Coasts, 10h. 30m.

Biscay, Gallician, and Portugal Coasts, 3h. om.
Irish West Coast, 3h. om. Irish South Coast, 5h. 15m.
Africa West Coast, 3h. om. America West Coast, 3h. om.
America East Coast, 4h. 30m.
TABLE

TABLE XXXVIII.

Of Latitudes and Longitudes of the principal Harbours, Capes, &c.

N. B. The Longitude is counted from the Royal Observatory at Greenwich, which is 0° 6' East of London. Those Places marked are either from astronomical Observations, or determined in a Manner very little inserior thereto: Those not so marked are collected by comparing the best Maps and Charts with these.

| Berwick on Tweed Holy Island Staples Islands Cocket or Coquet Island Tinmouth Castle North and South Shields Newcastle | 55 46
55 41
55 38
55 20
55 1 | 1 50
1 39
1 26
1 24 |
|--|--|---|
| Z-[Newcastle | 55 0
54 58 | 1 5 = 1 2 1 14 |
| Suter Point Sunderland Hartlepool Seaton Snook, the North Point of the Mouth of the River Tee Stockton upon Tee | 54 57
54 54
54 43
54 39
54 35 | 0 56
0 59
0 50 €
0 49 € |
| Whitby Scarborough Flamborough-Head Bridlington The Spurn Hull | 54 30
54 19
54 8
54 7
53 36
53 48 | 0 42
0 28 €
0 5 €
0 2
0 14 E
0 16W |

 $^{\circ}$

| Names of Places. | Latit.
North. | Longit. |
|--|--|--|
| Lynn-Regis Wells, Entrance of the Harbour Clay, and Blakeney, Entrance of Cromer Winterton Ness Yarmouth, Entrance of Harbour | 52 50
53 8
53 5
52 54
52 54
52 44 | 0 9
0 35
0 46
0 59
1 24
1 31 |
| Leoftoff Eafton Ness Southwold Alborough Orford Light-House Ipswich | 52 38
52 29
52 27
52 16
52 12
52 12 | 1 34
1 35
1 33
1 28
1 28
1 6 |
| Harwich | 52 1
51 57
51 46 | 1 12
0 49 m
0 38 |
| LONDON | 51°31½ | *o 6W |
| The Royal Observatory at GREENWAC Rochester Sheerness Margate N. Foreland Sandwich Deal-Castle S. Foreland Dover Dongeness | H *51 29
51 25
51 30
51 28
51 28
51 20
51 15
51 10
51 8
50 56 | 0 0 0 27 0 39 1 14 1 17 1 12 1 15 1 15 1 12 0 57 |
| Rye Haftings Beachy-Head Shoreham | 51 0
50 55
50 48
50 53 | 0 44 B
0 34 H
0 14
0 19W |
| Portsmouth Newport in the Isle of Wight Dunnose Point in ditto | *50 49
50 45
50 36 | *1 6 \$ 1 31 g |

| | Names of Places. | Latit.
North. | Longit. |
|---------------------------|--|--|--|
| Ra
Cl | eymouth ale of Portland indiock ime (by the Author) | 50 45
50 38
50 31
50 43
50 43 | 2 34 5
2 34 6
2 57 |
| The South Coaff of Devon. | per-Head (this and all other Places in Dewon by the Author, in his Survey of that County) dimouth termouth the mouth-Bar oppham teter eignmouth-Bar oppe's Nofe, the North Point of Torbay artmouth-Mewstone art Point aule Point of the North Point of Torbay artmouth-Mewstone art Point of the North Point of Torbay artmouth-Mewstone art Point of Torbay artmouth-Mewstone art Point of the North Point of Torbay artmouth-Mewstone art Point of Torbay artmouth-Mewstone art Point of Torbay artmouth the North Poin | 50 42
50 42
50 39
50 38
50 42
50 45
50 30
50 20
50 16
50 15
50 17
50 25 | 3 16
3 26
3 31
3 35
3 39
3 36
3 36
3 36
3 36
3 36
3 36
3 36 |
| Ra Foo Fa Li Scout Pa | Idystone Light-House ame-Head by Ilmouth zard and's-End illy-Island, St. Agnes-Light-House Ives Iditow Hartland-Point Lundy-file Clovelly-Pier Barnstaple, Bideford, and Appledore Ba | \$0 14
\$0 23
\$0 23
\$0 11
\$0 6
\$0 6
\$0 6
\$0 6
\$0 32
\$1 3
\$1 13
\$1 2 | 4 20
4 41
5 7
5 16
5 57
6 40
5 28 |

New Aberdeen

| A A A A A A A A A A A A A A A A A A A | | | | |
|---|----------------|---------------------|------------------|----------------------|
| Names of Places. | Lat | | Lor | git. |
| | 0 | 7 | 0 | , |
| Peter-Head, or Buchan Ness | 57 | 30 | | 40 |
| Kinnaird's Head | 57 | 42 | | 58 |
| Tarbat Ness | 57 | 57 | 3 | 43 |
| Castle Sinclair or Ness | 58 | 36 | 3 | 12 |
| Dungsby-Head | 58 | 45 | | 12 |
| Lidnes, S. E. Point of Orkney-Island | 58 | 50 | 3 | 0 |
| North End of Ronaldsha (one of the nor-
thernmost of the Orkney-Islands) . | 59 | - 1 | | 35 |
| Suenburgh-Head (the southernmost Point) of the Shetland Islands) | 59 | 54 | 1 | 50 \$ |
| North End of Unft, the northernmost of Shetland Island | 60 | 47 | 0 | 36 |
| The Mull of Galloway | 54 | 42 | 5 | 6 |
| Mull of Cantire | | 22 | | 6 |
| Lock-in-daal, Entrance of, in Isla Island | | 40 | 6 | 32 |
| Southernmost Point of Tirciy Island . | | 27 | 7 | 22 |
| Southernmost of Bishops Islands . | | 46 | 7 | 55 |
| Maiden Rock, West End of Sky Island . | | 34 | 7 | 18 |
| Point of Oreby, or Butt of the Lewis, be-7 | 131 | 37 | , | |
| ing the northernmost Point of Lewis | 58 | 37 | 6 | 54 |
| Sea-Coasts of Ireland. | 55
55
54 | \$
39
9
48 | 7
6
8
9 | 36
56
16
36 |

| Cow and Calf Mizen, and Miffen-Head Old Head of Kinfale Cape Clear Kinfale Cork Waterford Wexford Dublin Sea-Coafts of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barfleur Cherbourg Cape Barfleur Cherbourg Cape de la Hague Adderney Isle (belongs to England) Cafkets Sark (belongs to England) Guernfey Isle (belongs to England) Coulance Avaranche 51 2 2 2 51 37 33 52 13 7 33 53 12 7 3 55 58 1 51 56 58 1 51 57 59 58 1 51 58 59 58 1 51 59 59 64 50 7 33 50 7 1 50 50 15 1 35 50 15 15 50 15 1 35 50 15 1 | Anda I | Names o | f Places. | - N | 78 | Lat | | Lo | ngit. |
|--|-------------------------------|------------|-------------|-----------|------|-----------------|----------------|-----|-------|
| Cow and Calf Mizen, and Missen, Head Old Head of Kinsale Cape Clear Kinsale Cork Waterford Wexford Dublin Sea-Coasts of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barsteur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Caulance Avaranche St. Malo Avaranche St. Malo Si 1 2 2 13 7 33 53 12 7 3 Cae 1 2 13 7 33 Cae 2 22 Case 2 20 Case 3 2 13 7 3 Cae 2 22 Case 3 2 20 Caskets Cape Ge la Hague Alderney Isle (belongs to England) Caskets Caulance Avaranche St. Malo Avaranche St. Malo Si 2 2 20 Cape 3 2 20 Cape 4 2 2 20 Cape 4 2 2 20 Cape 4 2 2 20 Caskets Cape 6 2 2 3 Cape 6 2 3 3 Cape 6 2 3 3 Cape 7 3 3 Cape 8 3 4 5 5 5 Cape 9 3 3 5 Cape 9 4 6 Cape 9 5 Cape 9 4 6 Cape 9 4 6 Cape 9 4 6 Cape 9 5 Cape 9 4 6 Cape 9 7 C | | | | | | | 1 | 0 | , |
| Cow and Calf Mizen, and Miffen-Head Old Head of Kinfale Cape Clear Kinfale Cork Waterford Wexford Dublin Sea-Coafts of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Cafkets Sark (belongs to England) Cafkets Calvaranche St. Malo Avaranche St. Malo Si 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | Shillocks | | | | . 1 | 51 | 30 | 12 | 1 |
| Mizen, and Missen, Head Old Head of Kinsale Cape Clear Kinsale Cork Waterford Wexford Dublin Sea-Coasts of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barsteur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Casters Coulance Avaranche St. Malo Missen, Head St. Valey St. 17 Sp. 46 Sp. 49 Sp. | Cow and Cal | f | | | | 51 | | 10 | 42 |
| Old Head of Kinfale Cape Clear Kinfale Cork Waterford Wexford Dublin Sea-Coaffs of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Adderney Isle (belongs to England) Cafkets Sark (belongs to England) Cuernfey Isle (belongs to England) Cuernfey Isle (belongs to England) Coulance Avaranche St. Malo Si 17 Sp 46 Sp 17 Sp 36 Sp 17 Sp 36 Sp 14 Sp 36 Sp 46 Sp 17 Sp 37 Sp 38 Sp 46 Sp 27 Sp 38 Sp 46 Sp 46 Sp 47 Sp 38 Sp 46 Sp 47 Sp 47 Sp 48 Sp 47 Sp 47 Sp 48 Sp | Mizen, and | Miffen-He | ead | | | | 16 | | 36 |
| Cape Clear Kinfale Cork Waterford Wexford Dublin Sea-Coaffs of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Adderney Ifle (belongs to England) Cafkets Sark (belongs to England) Cuennice Avaranche St. Malo Si 19 9 36 51 49 9 36 52 13 7 33 53 12 7 3 **2 22 **2 22 **50 58 **1 51 **50 7 **1 50 50 15 1 35 **1 50 **2 20 **49 55 **1 51 **2 **2 22 **50 58 **1 51 **50 7 **1 50 **1 37 **1 37 **2 22 **30 **49 33 **1 38 **49 45 **2 23 **50 58 **1 51 **48 50 **2 20 **1 31 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **30 30 **49 33 **2 23 **50 58 **1 51 **2 22 **30 30 **49 33 **2 23 **50 58 **40 40 **40 4 | Old Head of | Kinfale | | | | | 35 | 9 | |
| Kinfale Cork Waterford Wexford Dublin Sea-Coaffs of France, without the Straits. Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barffeur Cherbourg Cape de la Hague Adderney Ifle (belongs to England) Cafkets Sark (belongs to England) Cauranche St. Malo Si 150 9 46 51 49 9 36 52 9 8 46 52 13 7 33 53 12 7 3 Sea-Coaffs of France, without the Straits. Si 2 22 22 22 24 25 26 27 28 29 29 21 21 22 22 22 22 24 25 26 26 27 28 29 29 20 20 21 22 20 21 22 20 21 22 20 22 20 22 20 22 20 22 20 22 23 24 24 25 26 26 27 28 29 29 20 20 20 20 21 22 23 24 24 24 25 26 26 27 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20 | Cape Clear | | | | | | | | 56 5 |
| Sea-Coafts of France, without the Straits. Si | Kinfale | 4 1 | | - | , Ta | | | 0 | 460 |
| Waterford 52 9 8 46 Dublin 52 13 7 33 Sea-Coafts of France, without the Straits. 7 3 3 53 12 7 3 Dunkirk 50 58 1 51 Calais 50 58 1 51 Boulogne 50 44 1 37 Abbeville 50 7 1 50 St. Valery 50 15 1 35 Dieppe 49 55 1 4 Havre 49 33 0 0 Rouen 49 27 1 5 Rayeux 49 11 0 2 Caen 49 11 0 2 Bayeux 49 16 0 43 Cape Barfleur 49 44 1 14 Cherbourg 49 44 1 14 Cape de la Hague 49 44 1 14 Alderney Isle (belongs to England) 49 45 2 36 Carkets 49 45 2 35 Sark (belongs to England) 49 25 2 35 Guernsey Isle (belongs to England) 49 33 2 51 Jerfey Isle (belongs to ditto) 49 33 2 51 Jerfey Isle (belongs to ditto) 49 33 2 51 Coulance 49 33 2 51 Avaranche 48 41 1 23 St. Malo 48 39 2 2 | | | | | | | | 0 | 26 |
| Sea-Coafts of France, without the Straits. Si | | | | 2 19 | | | | 8 | 16 |
| Sea-Coafts of France, without the Straits. | | | | | | | | - 7 | 40 |
| Sea-Coafts of France, without the Straits. Si | | | | | . 14 | | | | |
| Dunkirk Calais Boulogne Abbeville St. Valery Dieppe Havre Rouen Paris Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Guernsey Isle (belongs to ditto) | Duoma | | | | | 33 | 12 | 7 | 3 |
| Paris Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Carkets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo *48 50 *2 20 *49 11 *0 22 *49 38 *1 38 *2 23 *49 45 *2 23 *49 45 *2 35 *49 33 *2 25 *49 3 *1 27 *48 41 *1 23 *5t. Malo *48 39 *2 2 | St. Valery
Dieppe
Havre | | | | | 50
*49
49 | 15
55
33 | 1 0 | 35 4 |
| Caen Bayeux Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to England) Jersey Isle (belongs to England) Coulance Avaranche St. Malo 49 11 0 22 49 44 1 14 49 38 1 38 49 45 2 23 49 45 2 36 49 45 2 36 49 28 2 35 49 13 2 26 49 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 13 2 26 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 3 3 2 51 49 45 2 36 49 4 | | | | | | *48 | 50 | | |
| Bayeux Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 16 49 44 114 49 38 1 38 49 45 2 4 49 45 2 23 49 45 2 36 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 8t. Malo | | | | Billion I | | | | | |
| Cape Barfleur Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 44 1 14 49 38 1 38 49 45 2 4 49 45 2 23 49 45 2 36 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 81 Malo | , | | THU . | - 1 | | | | | |
| Cherbourg Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 38 1 38 49 45 2 23 49 45 2 36 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 51 Malo | | ır . | | | | | | - | |
| Cape de la Hague Alderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 45 2 23 49 45 2 36 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 | | | | • | | | | - | |
| Adderney Isle (belongs to England) Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 45 2 23 49 45 2 36 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 *48 39 2 2 | | Haone | | | | | | | - |
| Caskets Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 45 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 | | | re to Final | and | | | | | |
| Sark (belongs to England) Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 28 2 35 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 | | c (perong | s to Engl | and) | | | | | |
| Guernsey Isle (belongs to England) Jersey Isle (belongs to ditto) Coulance Avaranche St. Malo 49 33 2 51 49 13 2 26 49 3 1 27 48 41 1 23 48 39 2 2 | | on to Er- | land | | | | | | |
| Jerfey Isle (belongs to ditto) | | | | 1 1 | | | | | |
| Coulance | Guerniey II | le (beiong | s to Eng | land) | | | | | |
| Avaranche | Jeriey Itte (| belongs t | o ditto) . | | | | | | |
| St. Malo | | | | | | | | | |
| | | - | | | | | | 1 | |
| | | | | | | 1*48 | 39 | | 2 |

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| Sea-Coafts of | France | without | the | Straits, | continued. |
|---------------|--------|---------|-----|----------|------------|
|---------------|--------|---------|-----|----------|------------|

| Names of Places. | Latit.
North. | Longit. |
|---|---|---|
| | 0 1 | 0 1 |
| Isle de Brehat Morlais, Mouth of the River St Paul de Leon Isle de Bas Ushant lise Conquet Brest Le Rax Penmark Bellise Nantz Hey's Isle, or Isle Dieu Isle Ree Lucon Rochelle Isle Oleron Bourdeaux Bayone | 48 50
48 36 | 3 1
3 53
4 0
4 6
5 6
4 45
*4 31
4 50
4 18
8 3 30
*1 30
*1 10
*1 16
1 30
*0 35 |
| Sea-Coasts of France, within the Straits. Collioure Perpignan Narbonne Bezieus Agd Cette Montpellier Mouth of the River Rhone Arles Marseilles Toulon Isles d'Hieras Antibes | 42 32
*42 42
*43 11
43 22
43 25
*43 36
43 21
*43 41
*43 18
*43 17
42 50
*43 34 | *2 54
*3 0
3 20
3 30
3 50
*3 53
4 40
*4 38
*5 22
*5 56 |

| Names of | Latit.
North. | | Lo | ngit. | | |
|--|------------------|-------|-----------------|----------------------------|-----------|---------------------|
| St. Sebastian Bilboa Cape Pinas Cape Ortegal Cape Corunna or Groin Cape Finistere Isles of Bayona Cadiz Cape Trefulgar | | | 43
42
*36 | 29
56
4
28 | 36 7 9 9 | 54 West
46
33 |
| Sea-Coasts of Oporto Burlings Lisbon Cape St. Vincent Cape St. Maria | f Portugal. | | 39
38
36 | 10
35
42
53
58 | .9 | 24 West 10 30 |
| Sea-Coafts of Spain, Gibraltar Malaga Cape de Gat Cape Paul Alicant Cape St. Martin Valencia Barcelona Palama | within the Str | aits. | 36
36
38 | 35 | 3 1 0 0 0 | |

| | 1 La | tit. | | |
|--|------|------|-----|----------|
| Names of Places. | Nor | | Lo | ngit. |
| Sea-Coasts of Italy. | | , | | , |
| Nice | 1*43 | 42 | *7 | 17 |
| Genoa | *44 | 7 | *8 | 35 |
| Leghorn , | 43 | - | | 15 |
| Florence | | .46 | *11 | 2 |
| Civita Vecchia | 42 | 5 | *11 | 46 |
| Rome | *41 | | | 20 |
| Naples | | 51 | | 14 |
| de Ischase | 40 | | | |
| Stromboli | 39 | | 15 | 13 |
| Folicudi | 38 | 36 | | 20 |
| l'arentia | 40 | | 17 | |
| Anconia | *43 | | | 30 |
| Rimini | *44 | 4 | | 34 |
| Venice | 45 | | | 34 |
| Cape Pola | 45 | - | | 34 |
| Trieste, in Germany, . , . | 45 | 40 | - | - |
| Sea-Coasts of Turkey, &c. in the Mediter | | | | |
| Floume , | 45 | 28 | 14 | 57 |
| Zara | 44 | | | 10 |
| abioncello | 43 | | | 34 |
| Ragufa | 42 | | | 42 |
| Cattaro | | 32 | | io |
| Dulcigno | 45 | 5 | | 40 |
| a Valona | 40 | | | 50 |
| alermo , | 40 | | | 10 |
| a Praveza | 39 | | | |
| atras | 38 | | 22 | 28 |
| Corinth | 1 38 | 6 | 23 | 36 |
| | 36 | 52 | 21 | 36 |
| | | | | |
| Modon | 36 | 33 | 23 | 34 |
| C. St. Ange , | 36 | 33 | *23 | 34
18 |

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| Names of Places. | Latit.
North. | Longit. |
|--|---|---|
| C. Pailloury C. Monte Sancto Rondini Gallipoli C. Baba Culate Smyrna C. Blane Epheius Alexandretta, or Scandaroon Antioch Aleppo Tortofa Tripoli Scyde Joppa, or Jaffa | 40 5
40 28
41 2
40 30
39 28
38 56
*38 28
38 10
36 35
36 35
36 35
36 35
36 35
36 35
37 4
38 38 4
38 4 | 24 52 24 0 27 11 26 12 27 39 27 19 26 21 27 53 36 20 36 10 37 18 36 15 36 10 |
| Islands in the Mediterranean. Alboran Formentura Yvica Majorca, at Majorca, Minorca (Port Mahon) Cabrera Corsica, at Calvi, Bonifacio, South End of Corsica, C. Tolare, South C. S. Reperade, North Afinara Capraria Liba L Ponza L Iscia | 35 57
38 38
*38 53
*39 51
39 4
*42 45
41 20
38 48
41 12
41 0
42 41
*41 0
42 41 | 1 47
3 0
*3 48
3 10
*8 56
9 42
9 15
9 44
8 50
10 22
10 45 |

| Iflands | in | the | Mediterranean, | continued |
|---------|-----|-----|------------------|------------|
| Thands | 111 | me | MICUITOII ancau, | continued. |

| | Nan | nes of | Places. | 7 | | - | Lat
Nort | | Lor | git. |
|-------------|--------|--------|---------|--------|-------|-------|-------------|-------|------------|----------------|
| | | | | | | | • | 7 | 0 | 7 |
| Lompedose | | | | | | | 35 | 30 | 12 | 21 |
| La Linose | | | | | | 1 | 35 | | 12 | 43 |
| Uffica . | | | | | | | | 45 | | 50 |
| Alicudi | | | | | | | | 36 | | 42 |
| Folicudi | | | | | ٠. | | 38 | 37 | | 14 |
| Vulcano | | | | | | | 38 | 31 | | 49 |
| Salini | | | | | | | | 46 | | 47 |
| Lipari | | | | | | | 38 | 39 | | 49 |
| Panarie | | | | | , | | 38 | 58 | 15 | i |
| Trapano, W | left E | ind of | 2 | | | C | 38 | 3 | 12 | |
| Palermo, in | | | Si | cily | | 1 | *38 | 10 | *13 | |
| Cape Pasaro | . Eaf | t End | of \ | | | 1 | 36 | 40 | . 15 | |
| Tremitte | | | | | ١. | • | 42 | | 16 | 19 |
| Liffa | | | | | | | 43 | | 16 | 20 |
| Ozero . | | | | | 10-11 | • | 45 | | 14 | 14 6 |
| Pome | | | *. | | | | 43 | | 16 | 0 8 |
| St. Andrea | • | | | | | • | 43 | | 16 | 14 |
| Agosta | | | | | | | 42 | | | 4 |
| Cuzzola | | | | | | | 43 | 2 | | |
| Melada | | | | | • | | 42 | | | 4 |
| Argostoli | 100 | | | | | • | | | | |
| Zante | 103 | | | | • | • | 37 | 45 | | 4 |
| Dragnieres | 80 | | | • | | • | 36 | 17 | 23 | |
| Candia, in | 2 | | | | | ٠, | | | *25 | |
| Cance, in | (1. | Candi | 2 | | • |) | 35 | 4 1 3 | *24 | |
| C. Solomon | | Cana | • | • | • | 1 | 35 | | 171240 | 9 |
| Standie | , | • | | 370 | • | C | 35 | | | |
| Taffo | • | • | • | • | • | • | 35 | | | - |
| Limnos | • | | • | • | | • | 40 | 37 | 25 | 4 |
| Metelin | 3 | | • | • | • | | 39 | 55 | 25
26 | |
| | 18 | | | A real | | • | 39 | 7 | 20 | |
| 10 | ands | in the | Archip | elago. | | 1. 1. | ol. | ,20 | old
tod | noni
to tol |
| 12 2 173 | 0 4 | | | | | | | 200 | 100 | TI |
| Scio. | . 1 | | | | | | 38 | 19 | 26 | 14 |
| Samos | | | | | | | 37 | 43 | 27 | 19 4 |
| Patmos | . 2 | | | | | | 37 | 20 | 26 | SAR |

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| Islands in the Archipelago, continu | | |
|---|--|---|
| Names of Places. | Latit.
North. | Longit. |
| Mila Naxie Rhodes Stancho S. W. Eaft South End of Cyprus, C. Baffa C. St. Andrea C. de Gatte | 37 7
36 5
37 4 | 28 22 2
27 24 2
32 17
34 50 |
| The Coast of Barbary and Guinea, from Cape Spartel to the Cape of Good-Hope. Cape Spartel Larache La Mamore Sallee Cape Blanc Cape Cantin SAPHIE Cape de Gee Sante Croix Cape de Nun Cape Bojadore Cape das Barbas Cape Blanco Senegal (in French Maps, Fort St. Louis) Cape de Verde River Gambia, Entrance Cape Rouge Riv. de Sierra Leona, Entrance Cape Mount Cape Mezurado River Sestos, Entrance Cape Palmas River St. Andrew, Entrance Cape la Ho | 20 43
15 50
14 42
13 28
12 13
8 22
*6 38
*6 13
5 30
4 28
5 | 5 50
7 6 13
8 10
8 48
8 43
10 8
9 50
11 5
14 21
19 10
19 11
17 55
16 5
16 20
12 8
9 34
9 34 |

| The Coasts of Barbary | and Guinea, | continued. |
|-----------------------|-------------|------------|
|-----------------------|-------------|------------|

| . Names of Places. | Latit.
North. | Longit. |
|---|------------------|---------------|
| | 0 1 | . 1 |
| River Volta | *5 48 | 1 42 |
| Road of Juda in the Gulph of Benin . | *6 10 | 2 58 |
| Road of Little Ardra in the Gulph of Benin | | |
| River Formofa, or Benin-Entrance | 6 38 | 4 52 |
| Benin Town | 7 42 | |
| Cape Formofa | *4 32 | |
| New Calabar River, Entrance | 4 30 | |
| Old Calabar River, Entrance | 4 32 | 7 40 |
| River Cameron, Entrance | 4 0 | |
| Isle Fernando Po | 3 8 | 8 52 |
| Prince's Ifle | 1 30 | 7 52 |
| St. Thomas Isle | 0 12 | 7 10 |
| Cape St. John | 1 11 | |
| River Gabon, Entrance, on she Equator | 0 0 | 9 10 |
| ET 10 4 35 40 4 55 | Latit. | and the state |
| The Color of the Rose See 1 To one world | South. | A |
| 12 45 24 20 20 E | - | |
| Cape Lopas Gonfalvo | 0 50 | 8 41 |
| Isle Annabona | | 6 18 |
| Cape St. Catharine | | 9 3 |
| Majumba, or Alvar, Entrance of Bay] | 27/15 | Total Control |
| (here the Dutch have a Factory for I- | 3 19 | 9 30 |
| vory) | 27 230 | |
| Cape Padron | 5 5 | 11 5 |
| The Town of Songo, Fr. Congo, Eng.] | 6 | 11 30 |
| or Comptoir, Dutch | | 1 |
| Cape Ledo: | 9 3 | 11 20 |
| Benguela | | 10 45 |
| Cape Negro | 16 | 9 28 |
| Bay of Conception, or Gulph of St. Tho- | 24 4 | 2 13 33 |
| mas, Entrance | | 1 |
| Cape Voltas | 28 5 | |
| Bay St. Helena, or St. Marrin Cape of Good-Hope | | 2 17 33 |
| Cape of Good-Hope | 1 34 2 | 9 18 23 |

T t

| Sca-Coaft of the Main Continent in | the | Eaft-Indies, | from | the |
|------------------------------------|-----|--------------|------|-----|
| Cape of Good-Hope to Fort | | | | |

| Names of Places. | | | Longit. | |
|--|------|------|---------|-------|
| Control of the Contro | 0 | 1 | 0 | 1 |
| Cape of Good-Hope | +34 | 20 | *18 | 22 |
| Cape False or Hang-lip | | | *18 | |
| Cape Aiguilles | | | 20 | |
| Bay of Lagoa | | 25 | | |
| Cape Natal | | 50 | | 0 |
| River St. Lucie | | 20 | | 50 |
| Bay of Holy Spirits, or Laurens Marquez | 25 | 50 | | 56 |
| Cape Corientes | 124 | 0 | 34 | 50 |
| Mozambique | 15 | 4 | | |
| Cape Delgada | 10 | 8 | 41 | 15 |
| Mombaza , , | Nor | 50 | 41 | 30 |
| Magadoxo | | | | |
| Cape Bass | | 53 | | 27 5 |
| Cape Gardafoy, or South Cape of the Red-Ser | 1.7 | 35 | | 43 = |
| Cape Arden | | 45 | | 20 |
| Cape Babelmandel | | 45 | | 30 |
| Mocha, in the Red Sea | | 24 | | 15 |
| Cape Fortuach, or North Entrance of Red-Sea | 15 | 22 | 5.2 | 10 |
| Cape Rofalgate | 122 | - 0 | 59 | 50 |
| Cape Mozandon, South Point of the En- | | 6 | 100 | 35 |
| Goa | | 4.1 | | |
| Cape Comorin | | 31 | | 45 |
| Pondicherry | | 7 | | 20 |
| Fort St. George, or Madrass | | 56 | | 27 |
| Total State of Madrais | 1.3 | 13 | 80 | ng lo |
| er Guleb of St. Thee I all | zoit | dagi | 3 | |
| Newfoundland. | . 99 | navi | 1 | 37. |
| Bald Cape, N. E. End of Quirpon Isle . | 051 | 39 | 55 | 32 |
| Geese Cape, North Point of Hair Bay . | 151 | 16 | 55 | 44 |
| Groais Island, North End | 1 59 |) 0 | 50 | 44.0 |
| Bellifle | 150 | 46 | 4 55 | 44 |
| Cape St. John | 1 50 | 10 | 1 55 | 32 |

| Names of Places. | | Latit.
North. | | Longit. | | | | |
|--|------------|------------------|-------------|----------|-----|----------|--------|-----|
| Market | | | | | 0 | 7 | 0 | , |
| file Fogo
Cape Freels | | | | | | 0 | | 50 |
| Cape Bonavista | | | | • | | 34
52 | | |
| Baccaleau Isle, at | C Entre | 200 | Teini | ty Ray | | 22 | 52 | |
| cape St. Francis, | S. Point | of Co | ncenti | on Ray | 47 | 53 | 52 | |
| ort St. John | S. I OIII | or Co | псеры | on Day | *47 | 32 | 52 | |
| ay Bulls . | - | | | | | 20 | 52 | 5 |
| Cape Race | • | | | | | 39 | 52 | |
| irgins Rocks | 1 | | Charles and | | | 39 | | |
| Cape St. Mary's | | • | • | | 146 | 50 | 54 | |
| lacentia Harbou | | | | | | 26 | | 8: |
| hapean Rouge | | | | | | 55 | | 20 |
| t. Peter's Isle | | | | | | 48 | 56 | 10 |
| angley Isle | | | | | | 50 | 56 | 18 |
| Cape Ray . | | | | | | 36 | | 8 |
| ape Anguille, S | Point o | f Geo | roe's B | av | 47 | 52 | 50 | 16 |
| Cape St. George, | | | | | 48 | 28 | 59 | 8 |
| outh Head of Ba | | | | , | 49 | | - | 21 |
| Bonne Bay . | | | | | | 32 | | 55 |
| oint Rich . | | | | | | 40 | | 24 |
| Point Ferolle | | | | | | 2 | | 5 |
| Cape Norman | - thinks | | | | | 39 | 56 | |
| e Paris I de la companya della companya de la companya de la companya della compa | 1 | | | | 1 | - | 1116 | |
| | | | - | | - | | - | |
| Coaft of Labrad | ore, and | Strait | s of Bo | ellisse. | | | 19115 | |
| Belliste, in Entra | | | | | | | | 26 |
| Cape St. Francis | nee or a | | | | | | | 30 |
| Cape Charles | 10 | - | | | | 14 | | 26 |
| York or Chateau | Point. | quier. S | South I | Point 1 | 1 | - | 0.1773 | |
| of York, or C | nateany F | lav | | { | 51 | 56 | | |
| Red Bay | - Lucian L | -, | 1 | 3 | 51 | 44 | 56 | 26 |
| Isle au Bois | 1 | | | | | 25 | | 10 |
| Green Isle | | | | | 51 | | | 112 |
| Grand Point | | | | | | | 57 | |

| Names of Places. | | Latit.
North. | | Longit. | |
|--|------|------------------|-------------|----------|--|
| | 0 | , | 0 | 1 | |
| Efquimeaux Islands | 1.51 | 23 | 57 | 40 | |
| Shecatica Bay | 51 | 13 | | 18 ₹ | |
| Great Mecatina Isle | | 43 | | 0 2 | |
| flands of Washeminsker | 50 | 5 | | | |
| | - | List | | 5 10 | |
| Strait of Magellan. | 1 | | | | |
| 7 XII - 1- M | Sou | th. | 60 | | |
| Cape Virgin Mary | 52 | 24 | 68 | 28 | |
| Dungeness Point | 52 | 28 | 10 | | |
| Point Possession | 52 | | 12 12 12 12 | | |
| Cape Gregory | 52 | 39 | | | |
| Dolphin's Foreland | 52 | | 70 | 53 | |
| North End of Elizabeth's Island | 52 | 50 | 71 | 6 | |
| St. Bartholomew's Island | | 56 | 71 | | |
| Porpus Point | 53 | 6 | | 17 | |
| | 53 | | | 28 | |
| Cape Shut-up | 53 | | 11.021.2 | 32 | |
| Dolphin's Island | 53 | - | 44.4 | 41 | |
| Cape Forward, the fouthernmost in all Amer | | | | 59 | |
| Cape Holland | 53 | | | 34 | |
| Cape Gallant | 53 | | | 9 | |
| York Point | 53 | | | -4 | |
| Cape Quod | | 39 | 13 | 32 | |
| Butler's Bay | 53 | | | | |
| Lion's Cove | 53 | 37 | 74 | 9 | |
| Good-Lack Bay | 53 | 26 | | 25 | |
| Cape Notch | 53 | | 74 | 33 | |
| Swallow Harbour Canto I dono Last Auto | 53 | 22 | 14 | 36 | |
| Cape Monday | 53 | 29 | 1.4 | 30 | |
| Cana Unright | | 12 | | 20 | |
| Cape Upright | 53 | . 6 | | 38 | |
| Cape Providence | 52 | 57 | 7.5 | 37
52 | |
| | 52 | 43 | 7.0 | 52 | |

TABLE XXXVIII.

PART II.

Containing the Latitudes and Longitudes of the principal Harbours, Capes, &c. which are not contained in the first Part of this Table: Extracted from a popular Sea-Book.

The Longitude is counted from London.

Coast of Greenland.

| Names of Places. | | Nor | tit.
th. | Longit | |
|--|---------|------|-------------|--------|-----|
| 1 00 3 4 00 40 x 3 x 3 x 3 x 3 x 3 x 3 x 3 x 3 x 3 x | | 0 | 1 | • | 1 |
| Hacluit's Headland | 1.4 | 79 | 55 | 11 | 0 |
| Fair Foreland | 4.10 | | 20 | 10 | 52 |
| Cape Cold, the North End of Charle | s Isle | 79 | 0 | | 0 |
| Black Point, South End of it . | . I had | 78 | 0 | 10 | 30 |
| Dear Sound | | 79 | 15 | | 40 |
| Foul Sound | | 77 | 28 | | 50 |
| Bell Sound | | 77 | 15 | | 40 |
| Horn Sound | | 76 | 45 | | 36 |
| Point Look-out | Longing | 76 | 25 | | 36 |
| Helies Sound | | 78 | 55 | | 50 |
| Cape Barcan or Barcam | al al | 78 | 15 | | |
| Cape Blanco | | | - 4 | | 30 |
| Duelte Cours | | 77 | 45 | | 10# |
| Ducks Cove Edges Island | | 77 | .35 | | |
| | 4 | 76 | 55 | 23 | |
| Hope Island | • • " | 76 | 18 | 23 | |
| Cherry Island, or Bear Island | | 74 | 30 | 8 . 40 | 8 |
| Ice Point, or Cape Desire | | 77 | 40 | | |
| Admiralty's Island | | 75 | 5 | | 50 |
| Langeness | | 74 | 20 | 53 | 36 |
| Crofs Point | | 72 | 0 | 53 | 12 |
| Fretum Burrough | | 70 | | 61 | 20 |
| Colgoyen Isle | Du - 1 | 69 | P | 45 | . 0 |
| Cape Candenose | on a ch | 69 | 5 | 42 | 35 |
| Cape Barfo | | 1 66 | 301 | 38 | 0 |

 \odot

| Coast from Archangel to the | ne Naze of | Norwa | у. |
|------------------------------------|------------|-----------------|----------|
| Names of Places. | 1. 1. | Latit.
North | Longit. |
| ladining of the control of the | 7 | 0 | 0 1 |
| Archangel | | 64 30 | 40 30 |
| Cape Grace, or Cape Bona Fortun | a . | 66 (| 36 30 |
| Cape Gallant, or Sweetnose . | | 68 10 | 34 45 |
| Kilduyn Island | | 69 30 | 31 20 |
| River Kola, Entrance . | | 69 10 | |
| Fishers Island | | 70 0 | 1 - 4 / |
| North Cape | | 71 23 | |
| Tromfound Island | | 70 25 | |
| Island Sanien, South-West Point | | 69 35 | 13 0 |
| Loeford, West Point | | 68 15 | 9 40 - |
| Werro, or Weroy Island . | | 67 30 | |
| Dronten, or Dronthem | | 63 40 | 10 15 |
| Ransdel | | 63 15 | |
| North Point | | 62 20 | |
| Katts Neis, or Scuts Neis, South 1 | Point | 61 45 | 3 36 |
| Hearle Island, the South End | | 60 40 | 3 38 |
| North Bergen | | 60 10 | 5 40 |
| Bommel Island, North Point . | n - n | 59 25 | |
| ledder | | 58 5 | |
| Name of Norway | | | 1 |
| Masterland | | 57 45
57 53 | |
| Coasts in the Sound. | | 7. 100 | Book No. |
| Tun seels et l. | | 0.10 11 | and all |
| Maerden | Carried . | 58 19 | 8 57 |
| Caperwick | | | 10 10 |
| Ansloo, or Christiana | | 59 40 | |
| Gottenberg Gat | | 57 50 | 12 15 |
| Cape Kol | | 56 30 | 12 13 |
| Elfenburg | | | 12 30 1 |
| Valiferborn | | 55 28 | |
| Christianople | | 56 10 | 16 0 |
| Calmer | | 56 40 | |
| Defand, the South End | | 56 17 | 15 30 |
| [North End . | . // . | 57 20 | 17 0 |
| andfort | | 58 40 | 18 20 |

| Names of Places. | Latit.
North. | Longit. |
|--|------------------|-----------------------|
| The second secon | 0 1 | |
| Stockholm | 59 20 | 19 30 |
| Aboo | 00 40 | 21 10 |
| Raseborg | 60 28 | 22 35 |
| Borgo C 14 61 | 60 40 | 26 0 |
| Pelting Sound | 60 32 | 26 50 |
| Wyburg | 60 52 | 29 16 |
| Peteriburg | 60 0 | 30 25 |
| Narva | 59 27 | 28 25 |
| Revel | 59 27 | 24 51 |
| Nargin Island | 59 35 | 24 30 |
| Sybranness, in Dagoo, or Dagerort . | 59 0 | 23 0 |
| Arensberg, in Oesel Island | 58 20 | 23 32 |
| Parnaw 2 22 | 58 39 | 25 47 |
| Runen Island | 57 55 | 24 0 |
| Ryga | 57 4 | 25 .15 |
| Domeness | 57 30 | |
| Der Winda | 57 15 | 22 6 |
| Der Memel | 55 48 | 21 36 |
| Coningfburg | 54 43 | 21 35 |
| Dan.zic | 54 22 | |
| Heel | 54 40 | 19 8 |
| Gotland, the North End | 58 c | - |
| Faro Sound | 58 3 | 18 50 |
| Gotland Wilbuy | 57 30 | 1 - 3 |
| Gotland, the South End | 57 0 | And the second second |
| Bornholm | 55 15 | The second second |
| Camin, or Hamin | 54 10 | 15 6 |
| Jaimond, or Rugen | 54 40 | |
| Roftock | 34 37 | 18 40 |
| Straelfund 3 30 | 54 25 | 13 16 |
| Wifmar | 54 10 | 191 01 |
| Lubeck Die | 54 6 | |
| Copenhagen | 55 41 | |
| Eltenore | 56 22 | PROPERTY AND ADDRESS. |
| Uraniburg | 55 54 | Charlet March |
| Anout or Anholt Island | 56 5c | |
| Lefon, or Lefnow Island, or Jefou . | 57. 5 | 10 30 |
| The Scaw of od | 57 30 | The second second |

Green's Island

| Names of Places. | Latit.
North. | Longit. |
|---|------------------|-------------------|
| A continue of | 0 1 | 0 / |
| Holy-Land, or Helighland Isles | 54 14 | What was a second |
| Hambrough | 53 41 | |
| Bremen | 53 30 | |
| Emden | | 0.7 35 |
| Ameland Island, or Amoyland . | 53 30 | |
| Scheling | 53 27 | 5 58 |
| The Fly | 53 16 | 5 30 |
| The Texel | 53 15 | 5 10 |
| Amfterdam | 52 23 | 5 47 |
| Rotterdam | 51.55 | 4 30 |
| Antwerp | 51 10 | |
| The Brill | 52 0 | |
| Middleburgh, in Zealand | | 3 58 |
| \$luys | 51 14 | |
| Oftend | | 3 1 |
| Dunkirk | 51 2 | 2 27 |
| The Sea-Coasts about the Island of Iceland. | | ipal |
| Grim's Hole, or Geuberman's Rocks . | 66 23 | 29 30 |
| Gamar Isles, or Gille | 65 48 | 26 54 |
| Westmania Isles | 63 30 | 22 54 |
| Rock Point | | 26 24 |
| Snow Hill | 65 11 | 27 14 |
| Fair Foreland | | 26 27 |
| Rage Point, or Orgal Bay | 66 0 | 25 25 5 |
| Marza, or Largeness | 66 8 | 24 00 |
| Grimfa Ifle | 67 .15 | 22 34 |
| Lange Nefs | | 12 50 |
| Bargarer's Point | | 16 35 |
| silly or Pappy Isles | | 12:10 |
| Horn Bay | | 12 0 |
| | 163 25 | |
| Portland | | 21 5 |
| Green's Island | 00 50 | 24 40 |

| Names of | Places. | Latit. | |
|---------------------------|------------------|---------|--|
| | | 0 | 0 1 |
| Para River | | . 250 | 42 47 |
| Cape St. Roque | | | 35 47 |
| Rio Grande . | | . 5 21 | |
| Permanbuco . | | 7 4 | 35 30 |
| Cape St. Augustine | | . 8 3 | 35 20 |
| Island Ferdinando Loren | ha . | . 35 | |
| River St. Francisco | | . 10 50 | |
| Bay de Todos Sanctos | | . 12 4 | 41 0 |
| Port Segura | | 16 3 | 40 35 |
| Cape de Abrolhos . | | 18 1 | 41 7 |
| Spiriti Sancto | | 19.5 | |
| Cape St. Thomas | | . 22 1 | |
| Cape Frio | | | 42 20 |
| Island St. Catharina | | - 27 5 | |
| River Grande's Entrance | | . 31 5 | 52 0 |
| Cape St. Waria | | . 34 3 | \$6 40 |
| River de la Plata, or Ca | ape St. Antonio | 35 4 | 67 36 |
| Cape de St. Andreas | | | 65 5 |
| Bay Sinfunda, or Sinfend | do · · | . 42 3 | |
| Point de los Leones | | | 70 40 |
| River Camerones | | 45 30 | 73 0 |
| Cape Blanco | | 46 5 | 72 7 |
| Pepy's Ifle | med table of an | 47 20 | 66 40 |
| Point of River St. Julian | | 48 4 | |
| Cape Virgin Mary of Ma | agel. Straits | . 52 | 75 5 |
| La Maire Straits . | | . 54 3 | 4 73 T |
| C. Horn, the S. Part of | f Terra del Fue | | 79 55 |
| Island dos Picos . | | . 22 3 | 25 15 |
| Island de Martinvas | | . 19 3 | |
| Island St. Maria de Agol | fta . | . 19 4 | 29 10 |
| Island Trinidada . | | | 30 0 |
| Island Ascention . | | | 14 5 |
| Coasts on the Main Conti | nent in the E. I | indies. | 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| or L | | North | |
| Mufcat . | | . 23 3 | 59 45 |

| Longit | Names of Places. | 10 00 | Latit.
North | | ngit. |
|--------------------|-----------------------------|---------|-----------------|--------------|-------|
| 1 0 | | | 0 / | | 1 |
| Bastora, or | Busero | | 29 4 | 5 49 | 20 |
| Gumbaroo | | | 27. 2 | 0 56 | 40 |
| Cape Glade | | | 25 5 | 0 63 | 34 |
| | ada or Cinde | | 24 4 | | 35 |
| Dia Head | | • 36 | 21 | 2 69 | 50 |
| Surat | | | 21 1 | | 25 |
| Deman | | | 20 | | 30 |
| Sombay. If | and | | 19 1 | 8 73 | 6 |
| t. John's | 1.00 | | 19 5 | | 20 |
| Chaule, or | Choale | | 18 3 | 1 73 | 37 |
| Dabul | | | 18 | 3 74 | 0 |
| Rajapour I | de | 1 | 47:0 | 2 74 | 10 |
| Goa | | | 15 3 | 1 73 | 50 |
| Carwar | | · 25 | 14 4 | 7 75 | 0 |
| Manquelor | | | 12 5 | | 25. |
| Fellecherry | FAT | | 11:4 | 2 75 | 25 |
| Callecut | er St. Antopine as | ro. | 119 | 6 75 | 30 |
| annanou | 4 8 | 464 | 10 2 | 2 75 | 35 |
| Cochin | F | | | 4 75 | |
| Anjanga | | : | 8 2 | | 25 |
| Cape Com | | | 7.5 | 9 77 | 25 |
| Colombo in | | | 7 0 | 7 79 | 30 |
| | alle, or Gallo, on the same | | | 0 80 | |
| | ead, on the fame . | main! | 6.3 | 2 80 | 45 |
| Trinconom | | 14 10 | | 0 81 | 40 |
| Great Baff | | . [| 6 2 | 3 81 | 45 |
| etrapatam | | Part. C | 9:5 | 0 80 | 10 |
| Negrapata | | | 140 | 1 79 | 55 |
| Trincumb | | . 11 | Irel | 5 29 | 50 |
| Porta Nov | | . A. S. | 11:24 | 5 79
4 80 | 44 |
| Pondicher | | | 1114 | 4 80 | 18 |
| | yid, or Tregapatam | | 12 | 5 79 | 48 |
| Conymere | | | 12 3 | 5 80 | 5 |
| Fort St. G | eorge, or Madrassapatam | | 13 | 1 80 | 32 |
| Pullicat | | | 13 3 | 0 80 | 22 |
| Armegon | . Probent . Tody at fas- | Convi | 44 | 6 80 | 12 |
| Petapoly | | | 16 | 6 80 | 42 |
| Due Point | | | 16 | | 32 |

. 13

The Sea-Coasts on the Main Continent in the East-Indies,

| Names of Places. | 10-40 | Lat
Nor | | Lo | ngit. |
|-----------------------------|-------|------------|-------|-----|-------|
| 25.0 05.85 | | 0 | , | . 0 | -1 |
| Mafulapatam | | 16 | 22 | 81 | 10 |
| Maffipore | | 16 | 30 | 81 | 57 |
| Visagapatam | | 17 | | | 57 |
| Birmlapatam | | 17 | 51 | - | 9 |
| Pondy | | 18 | 49 | 85 | 15 |
| Jacarnaut Pagod | | | 51 | | 42 |
| Arsepure | | | 11 | | 23 |
| Point Palmiras | | | 42 | | 52 |
| Balasore Road | | | | 87 | |
| Piply | | 21 | 25 | 87 | 57 |
| Hughly | | 23 | . 9 | | 5 |
| Dacca | | 23 | 57 | | 55 |
| Cafimbazar | | 25 | .6 | | 45 |
| River Bengal | | 22 | : 17 | | |
| River Aracan | | | | 93 | 40 |
| Pegu | | | 35 | | 20 7 |
| Melacca | | 2 | 12 | 102 | 10 |
| Formofa | | 2 | -5 | 101 | 30 |
| Point Romania | | 1 | 16 | 103 | 15 |
| Point Cui | | 12 | 10 | 109 | 28 |
| Siam Entrance | | 14 | 18 | 100 | 554 |
| Cambodia Entrance | | | | | 0 . |
| Cape Anarilla, or Avarilla | | 13 | 25 | 108 | 3 |
| Cochin, or Chinchen | | 14 | 5 | 107 | 56 |
| Tonquin | | 20 | 50 | 105 | 401 |
| Canton | | 23 | 14 | 113 | 6 |
| Amoye Island | | 24 | 35 | 116 | 50. |
| Hockfew | | | | 118 | |
| River Swadia | | | | 118 | |
| Liampo, Lingpo, or Ningpo . | | | | 120 | |
| Island Chusan | | 30 | | 120 | |
| Nanquin | | 33 | | 120 | i |
| Pekin | | 39 | | 116 | 28 |
| 1 13 14 31 | | 1 | n vis | bdA | bac |
| 1 12 10 10 2 | | | 1 | - 0 | Hodel |

 \odot

| Names of Places. | Latit. South. | Longit. |
|--|---------------|----------|
| | 0 1 | 0 / |
| St. Paul | 38 20 | 1 1 1 3 |
| Romeras de Caffelamas | 28 45 | 67 17 |
| St. Joan de Lisbon | 25.24 | |
| Diogo Reys | 19 50 | |
| | 16 38 | |
| Mauritius of the Malha of the M | 20 10 | |
| | 11 15 | 60 30 |
| C. St. Mary, S.] End of St. S | 25 47 | |
| C. D'Ambre, N. Laurence [| 12 10 | 51 5 |
| t. John de Nova | 17 21 | 13 |
| t. Christova | 17 36 | |
| Mayetto | 13 10 | 45 38 |
| oanna
Iohilla | 12 10 | 45 3 |
| | 12 5 | 44 23 |
| omero, or Angazecha | 11 40 | 43 50 |
| darfia, or Monfia | . 8 7 | 40.15 |
| Canzebar | 6 48 | 39.57 |
| enda soliz. | 5 20 | 39 35 |
| omero: | 10.30 | 44 39 |
| ofmeledo | 10.14 | 51 17 |
| uan de Nova | 9.30 | 52.40 |
| fore life of a. | 9 55 | 53 50 |
| galega, or Gallega | 9 47 | 54 31 |
| etta Hermanes | 2 47 | 59 13 |
| Quevelo, Quehello | 3 53 | 52 36 |
| affat de Banhas | 5 5 | 48 46 |
| Hermanos . | 3 32 | 54 45 |
| fland Gratio | 6 10 | 63 1 |
| adra Banhas | 2. 10 | 65 32 |
| affas de Chagos, or Island de Chagos | . 6 55 | 68 45 . |
| hree Germans | 4 30 | 62 43 |
| cross Island | 4 10 | 58 5 |
| 1 2 2 1 20 1 | North. | dispers. |
| acatora, or Zacatora | 12 21 | 54 5 |
| Sand Abdeleur | 12 4 | 53 4 |
| ubello | 8 10 | 71 45 |
| Malique | 9 0 | 72 58 |
| Garipe, or Gripe | 10 40 | 72 37 |

Islands in the East-Indies, continued.

| Names of Places. | Latit.
North. | Longit. |
|---|---|--|
| Qualpena Andomaon, or Antada Ceylone, South End, C. Gallo Waldiviæ { South } Part Yas de Diego Reys Wanila Aynian { N. W. } Point [S. E.] Point | 0 /
10 0
11 10
6 8
0 25
7 14
0 20
14 25
19 30
19 55
35 30 | 73 30
73 32
81 15
76 22
73 4
72 0
117 6
107 9
109 55
140 30 5
128 30 |
| Kocas Andaman the middle Borneo Nicobar North-Well End of Sumatra Beneols South-Raft End of Sumatra Jambe Bantam Batavia | 7 11
5 22
South.
3 55
5 22
1 19
6 11 | |
| The Southern Islands, or C. de Verde Islands. St. Antonio St. Vincent St. Lucia, or Round Hland St. Nicholas Isle de Sal Bonavista Mayo, or Island May St. Jago Ruego, or Fulgo Brava's St. Paul | 17 15 | 24 20
23 38
21 56
22 8 W
22 8 C
22 45 |

Shark Point . .

Cape Southampton

63 30 79 53

64 30 82 55

61

55 86 48

| The Sea-Coafts of | the North | Part of America, | Hudion's Bay. |
|-------------------|-----------|------------------|---------------|
|-------------------|-----------|------------------|---------------|

| Names of Places. | North. | |
|--|---------|-----------|
| Control of the contro | 0 1 | 0 1 |
| Sir Thomas Roe's Welcome | 64 1 | 92 4 |
| Cape Churchill | | 95 20 |
| Port Nelson, or York Fort | | 93 58 |
| New Segern | | 88 20 |
| Cape Henrietta Maria | 55 | 84.30 |
| Viner's life | 53 | 5 84 3 |
| Albany Fort | 52 2 | 84 3 |
| Mouse River's Mouth | 51 1 | 8 83 13 |
| Point Comfort | 51 2 | 4 81 11 |
| Frenchman's River | 51 2 | 0 80 14 |
| Rupert's River | 51 3 | 79 26 |
| Charlton's Island | 152 | 8 81 20 |
| Danby's Island | 52 1 | \$ 80 56 |
| Shepherd's Island | 5 414 | 80 48 |
| Solomon's Temple Island | 53 bg | 81 0 |
| Wefton's Ifle | 52 5 | 8 82 48 |
| Cubs Ifle | | 82 40 5 |
| Bear's Island | 3412 | 5 83 45 0 |
| Baker's Dozen's Isles | 57 5 | 6 81 25 |
| orocher a tites of 1 | | 0 81 30 |
| Mansfield's Isle, the middle , | 61 4 | 2 80 30 |
| Cape Jones | 54 5 | 78 58 |
| Cape Walfingham , | 6203 | 5 77 55 |
| Cape Charles | 62 1 | 75 35 |
| Button's Isles | 6012 | 66 27 |
| Tadoufack | 49 | 0 67 5 |
| Quebeck | 46 5 | 69 48 |
| | 49 4 | 0 60 45 |
| Cape St. Charles, or Charles Straits | 52 1 | 0 55 0 |
| Cape Britain | | 0 38 30 |
| Cape Sable 7 18 1 100 N . A logit bill 10 | 43 5 | 64 58 |
| | 44 4 | 5 65 40 |
| Point or Port Royal Penobleut River | 1 44 14 | 0/67 10 |
| North Yarmouth | 4441 | 4 67.58 |
| Pilcataway Entrance | 43 2 | 0 70 10 |
| Cape Anne Island | 42 4 | 6 69 45 |
| Cape Codd | 4200 | 68 55 |
| Botton 08 or 12 | 42 12 | 5670 37 |

| Names of Places. | Latit.
North. | Longit. |
|--|------------------|---|
| | 0 / | 0 / |
| Plymouth | . 42 2 | 68 50 |
| South of St. George's Bank | . 41 45 | 67 15 |
| South End of Nantuclet Shoals . | . 39 50 | 68 23 |
| Nantucket Island | | 68 48 |
| Martha's Vineyard | 41 14 | 69 9 |
| £1.88,81.13 | of Spolf Na | RA PAR |
| The Sea-Coasts on the Main Continen West-Indies. | t in the | uk 2 sany
pandapa |
| Elizabeth's Island | AT HE | 69 13 |
| Block Island | 41 16 | 69 58 |
| Montock Point | 41 18 | 70 20 |
| Fifher's Ifland | 4T 20 | 70 40 |
| New-York 32 52 | 40 42 | 70 40
74 14 |
| Sandy Hook | 40 28 | 74 16 |
| Cape James or Henlopen | 28 49 | 75 28 |
| Philadelphia . | 30 57 | 75 30 |
| Cape May | 39 9 | 75 15 |
| Cape Charles | 27 11 | 76 11 |
| Cape Henry | 26 58 | 76 22 |
| Cape Hatterns | . 35 36 | 74 20 |
| Cape Feare | . 32 58 | 76 94 |
| Cape Roman or Cattit | 33 27 | 77 50 |
| Afhley River, or Charles Town | . 33 5 | 78 46 |
| Port Royal | . 32 0 | 70 43 |
| Bay of St. Augustine | . 30 10 | 80 43 |
| Cape Florida | 24 07 | 80 10 |
| Laphillapina, or Apalachia . | 20 47 | 74 14
74 15
75 28
75 30
75 15
76 11
76 23
74 20
76 34
77 50
78 46
79 43
80 43
80 43
80 30
84 44
96 50 |
| R. Spirious Sanctus, or Miffifippi R. 1 | Mouth 28 54 | 96 50 |
| Tompeck . | | 100 15 |
| Liva, or Vera Cruz | 10 14 | 97 48 |
| Sierra, or Cape de Martin | 10 10 | OK 45 |
| Frifte, or Triefte Island | 18 10 | 95 45 |
| Campecha | 10 10 | 92 10 |
| Cape Condefedo | | 89.40 |
| Cape Catocha | 21.10 | 86 10 |

| Names of Places. | Latit.
North. | Longit. |
|---|--|---|
| Salamanca Cape Honduras Cape Camaron Entrance of Nicaragua Porto Bello Darien, on Scotch Settlement Carthagena Cape Conquiquaco, or Coquibaco Island Curasoa, or Quicasao Island Margaritta Island Trinidada Mouth of Oronoque River Cape Three Points Cape Nassau N. Cape, the Middle of Caopory Island Suranam Cape Orange Mouth of Amazons River | 4 25 | 84 45
83 30
84 15
79 45
78 45
75 21
70 42
68 15
63 20
60 17
59 25
62 10
57 55
49 56
50 50 |
| Islands in the West-Indies. Tobago, West-End Barbadoes, at Bridge-Town Granado Granadillos Boquia St. Vincent St. Lucia Martinica Dominica Marigallanta Guardalupa Desseada Antigua Barbuda | 11 10
12 58
11 57
12 20
12 50
13 12
13 55
14 43
15 23
15 58 | 59 55
59 55
59 53
60 12
60 4
60 54
60 30
60 20
61 15
60 10
61 45 |

Islands in the West-Indies, continued.

| Names of Places. | Latit. | Longit |
|-------------------------------------|-------------------------|---|
| | 0.1 | 0 / |
| Montferrat | 16 45 | 62 15 |
| Kodondo | 16 55 | 61 15. |
| Nevis | 17 5 | 62 32 |
| St. Christopher's | 17 17 | 62 40 |
| Bufatia | 17 25 | 62 20 |
| Saba · · · · | -17 35 | 62 40 |
| St. Barthelemew | 17 52 | 6z 6 |
| St. Martin's | | 62 10 |
| Anguilla | | 62 13 |
| Sambrero | | 62 30 |
| Anegeds | 18 47 | 62 46 |
| St. Cruize | 17 52 | 63 30 |
| Virgina | 18 30 | 03 25 |
| St. Thomas | 18 30 | 63 22 |
| St. John de Post Rico | | 65 37 |
| Mands and Rocks of Aves | 12 1 | 64 30 |
| Fortuga, or Tortugas | | 63 54 |
| Margaritta | | 63 20 |
| Blanco | 11 50 | 63 40 |
| Teftigos
D'Orchila | | 62 41 |
| | 1 45 | 64 30 |
| Bonziry, or Bonzire | 12 | 68 28 |
| East-End of Hispaniola | 18 18 | 60 15 |
| West-End of the same | 18 26 | SECOND REPORT OF THE SECOND |
| East-End of Jamaica | 18 0 | BALL OF BALL BOOK AND |
| Port-Royal, Jamaica | 17 40 | 76 32 |
| West-End of the same | . 8 8 | |
| Raft-Bud of Cuba | 20 15 | BOLDE AND DESCRIPTION |
| Havanah | 12 40 | 73 55
82 55 |
| West-End of Cuba | 21 40 | 86 30 |
| La Bermudas | 32 25 | 63 40 |
| Bahama Island | 26 50 | 79 16 |
| Abaco, South-End | 26 0 | |
| Andrews, or Androis, or North-End . | C 1 (C 1790) (C 1 1923) | 78 40 |
| Providence | 25 0 | |
| Harbour Island | 25 37 | |
| Eleuthera, South-End, or Hathern . | 24 40 | |

| | North. | Longit. |
|--|---------|--|
| | 1 | |
| at-Island, the Middle | . 24 25 | 75 9 |
| Vatling's Ifland | 24 3 | 74 35 |
| tum Key | . 23 45 | |
| xuma | . 23 22 | |
| crooked Ifland, North End | . 22 56 | 74 13 |
| ong Island, South End | . 22 41 | 5 M. D. W. C. Charles . |
| twood's Keys | . 23 10 | |
| Asyaguana | . 22 35 | |
| Committee of the Commit | . 32 40 | |
| Merapervous | . 21 58 | |
| logities | - 21 17 | |
| lineago, West-End | . 30 25 | and the second second |
| Weft Caicos Turks Island | 21 38 | |
| Abrolho Bank, the North End | 21 35 | A STATE OF THE PARTY OF THE PAR |
| Plate Rack | 20 10 | THE RESERVE OF THE PARTY OF THE |
| Aucares | 21 30 | Man W. A Vice |
| /erd | 21 17 | |
| ejad Zal | . 21 10 | \$100 BEST OF ST. VON |
| ings 105, 101 | 21, 20 | A SECOND CONTRACTOR OF THE PARTY OF THE PART |
| Great Camains | . 18 54 | A SECURE OF STREET |
| áttle Camains | 19 30 | |
| St. Andrero | 12 23 | |
| Camanuback | . 19 8 | A STREET, CARLOTTER A. |
| Pedro Shoals, North Side | 17 10 | A PROPERTY AND ADDRESS. |
| St. Milan | . 17 10 | 81 28 |
| Guayna | . 16 53 | |
| Cozumelli SZuna Quita | 19 30 | |

that Can babased one architement for a health deal and that sort word I modily on my for a level on a whom I want to Meadage the ground we be an sent tour Afronomer to being the period de despression of the transfer of the period of ABLE TABLE on the first of the control of the contr

At were worth very very

Tronomer-Regard

TABLE XXXVIII.

PART III.

dingo.

Containing the Latitudes and Longitudes of sundry Places in various Parts of the World; collected from good Authorities; which will be frequently of Use in correcting the Defects of those in Part II.

For if the Latitude and Longitude of any Place, which were given in the zd Part, are also found in this, they serve not only to correct that particular Place in that Part, but also other neighbouring Places: And, in this Manner, as Leisure will permit, and good Materials can be collected, I hope to make the zd Part of this Table more correct.

| Names of Places lying between 60° and 80° North Latitude, and between 0° and 90° West Longitude. | 821 | Long |
|---|---------------------------------|----------------------------------|
| Cape Resolution, Hudson's Bay, &c. Button's lifes [Lat. by Capt. Davis, in 1585, was 61° 10'; but another says, } | 61 29 | 65 16 |
| 60° 25
Saddle-Back Island
Island of God's Mercies, or upper Savage Island
Cape Charles
Salisbury Island | 62 7
62 32
62 46
63 29 | 68 13
70 48
74 15
76 47 |
| Cape Walfingham Cape Diggs North End of Maniel Island Cape Fembroke | 62 39 | |

As these Latitudes and Longitudes are founded on Observations made by Mr. Wales, (a Gentleman whom I have the Pleasure of knowing to be an ingenious Astronomer,) I think they may be depended on, though they are in some Degree dependent on the Run of the Ship. —— The Latitudes and Longituses following are collected from the Philosophical Transactions, some Publications by the Astronomer-Royal, HAWKESWORTH'S Voyages, &c. &c.

Places between Latitudes 60° and 80° North, and Longitudes

| Names of Places. | Country or Coaft. | Latit. | Long. |
|---|--|---|---|
| Abo Archangel Cajanebourg Drontheim Hernofand Kola North Cape, or Island Magard Tornea Umba | Baltic Sea White Sea Finland Norway Sweden Lapland Lapland Sweden Ruffia | 60 27
64 34
64 13
63 26
62 38
68 52
71 10
65 51
66 39 | 38 6
27 51
11 4
17 53
33 8 |
| Place between Lat. 60° and 80° N. and Long. 90° and 180° E | o:L | 611a | 129 52 |
| Places between Lat, of and 60° N
and Long, 90° and 180° West. | 270 | orda f | nga
T-nga
T-nga
Talang |
| Churchill River, Pr. Wales For
Mexico
St. Joseph | New Spain
California | 58 47
19 54 | 94 55
100 5
109 35 |
| Places between Lat. 0° and 60°N and Long. 0° and 90° West. | tint the kong. ors if a (narrowel ex tige blood the Constitution | meril di
ord di
diogno, | ber Torre |
| Great Bear Isle Cambridge Boston Cape Henlopen Havannah, in the Island of Cub | Hudfon's Bay
New England
New England
Maryland | 54 34
42 25
42 25
42 25
38 47 | 79 56
71 10
70 37
75 13
82 18 |

| Names of Places, | Country or Coaft, | Latit, | Long. | |
|---|--|-------------|---------------------------|--|
| 1 0 1- 0 | 1 | . 1 | 0 1 | |
| Port Royal, in Jamaica | West Indies | 18 0 | 76 4 | |
| ort St Louis, Hispaniola | West Indies | 18 19 | 73 6 | |
| ouilbourg | Cape Breton | 45 54 | 59 5 | |
| e. Paul's Island | Cape Breton | 47 12 | | |
| forth Cape | Cape Breton | 47 6 | 60 | |
| t. Martha | . Terra Firma | 11 27 | 74 | |
| ort Royal, in Martinico . | . West Indies | 14 36 | | |
| orilon | . Penfilvania | 40 10 | | |
| lew Orleans . | . Louisiana | 29 58 | 89.5 | |
| unama | . Mexico | 8 58 | | |
| 200 | Switzerland | 43 15 | . 0 | |
| etit Grove, Ife Hifpaniola | . West Indies | 18 27 | 72 3 | |
| orto Bello | New Spain | 9 33 | | |
| Quebec | Canada | 48 47 | | |
| ape Sable | New Scotland | 43 24 | | |
| ic of Teneriff | Canaries | 28 13 | 16 3 | |
| Re of Thomas | Virgin's Ifles | 18 22 | 64 3 | |
| ape Verd | . Negroland | 14 43 | | |
| irgin Gorda Fort | . West Indies | 18 18 | | |
| lew-York | . New England | 40 43 | | |
| Carthagena | Terra Firma | 10 27 | | |
| ayenne, Ifle Cayenne | . AtlanticOcean | 4 56 | | |
| harlton Ide | Hadfon's Bay | 54 3 | THE STREET STREET, STREET | |
| | Prairie Pi | 10 30 | 67 3 | |
| Tana life at the Town [from | | | 4/3 | |
| sano Isle, at the Town from
this Place French Charte | Canaries | 27 47 | 17 3 | |
| frequently count the Long. | The state of the s | 11 41 | ./ 3 | |
| ape St. François | . Hispaniola | 19 57 | 73 1 | |
| traite of Proplet Ingrowed | | .2 24 | 7. | |
| Part, opposite a high Moun- | Nova Scotia | 192 | 61 2 | |
| tain towards the Continent | Chian scotta | 42.33 | Bla, | |
| | | W. C. S. S. | 00000000 | |
| ort Praja, St Jago, Longit | 1 | 14 53 | desta | |
| per Reck. 23° 50' | | 100 | Salar. | |
| Gibralter | THE RESIDENCE AND ADDRESS. | 34 34 | 16 3 | |
| hiladelphia | Penfilvania | 36 5 | 100 | |
| unaverbure | COLUMN TERMS | 39 57 | 13.15 | |

Places between Latitude of and 60° North, and Longitude of and 90° East.

| Names of Places. | Names of Places. Country or Coaft. | | | |
|------------------------------|------------------------------------|-------------|--|--|
| | | 0 / | | |
| gra | India | 26 43 | 26 4 | |
| intwerp | Flanders | 51 13 | banana | |
| alafore | India | 21 20 | 86 | |
| erlin | Germany | 52 32 | | |
| . William, Calcutta | India | 22 36 | | |
| Calmar | Sweden | 56 40 | | |
| ambray | Netherlands | 50 10 | the same of the Australia | |
| Carlescroon | Sweden | | 3 1 | |
| afan | Russia | 56 20 | CORPORATION AND ADDRESS. | |
| | India | 55 44 | | |
| handernagore | | 22 51 | | |
| ape Comoria | . India | 7 56 | | |
| openhagen | . Denmark | 55 44 | 12 4 | |
|)antzic , | Poland | 54 22 | 18 3 | |
| rgeron | . Armenia | 39.57 | 48 3 | |
| rawenburgh | . Pruffia | 54 22 | 20 | |
| Geneva | Savoy | 46 12 | 6.8 | |
| ient | Netherlands | 51 3 | 3 4 | |
| ottenhurg . | . Sweden | 57 42 | | |
| Sottingen Obl. | . Germany | 51 32 | 95 | |
| urjet | - Aftracan | 47 7 | 52 | |
| rypiwald | Pomerania | 54 42 | | |
| lague | . Netherlands | 54 4 | | |
| andae | . Germany | 49 12 | 8 | |
| ngolfadt | Germany | 48 46 | .12 3 | |
| andicroon | . Sweden | 55 52 | | |
| aufance | . Switzerland | 46 31 | 6 | |
| eipfic . | . Germany | 51 19 | 12. | |
| cydea | Holland | 52 10 | ESERTISM (NO. | |
| unden | . Sweden | 55 42 | 4.8 | |
| falines . | . Netherlands | | Committee of the Commit | |
| dons | . Netherlands | 50 27 | ii Asp | |
| Molcow | Rofia | | 0 23, 15 | |
| | Flanders | 55:145 | 37. 4 | |
| Vieupost . | Germany | | 的是此 | |
| Varemberg . | Germany | 49 37 | 1009 | |
| threat him Bolleager & Harry | | transit (1) | 10 - 11 | |

Places between Latitude oo and 600 North, and Longitude oo and 900 East, continued.

| Names of Places. | Country or Coaft. | Latit. | Long. |
|--|--|---|--|
| The state of the s | The water of the state of the s | 0 1 | 0 |
| Orenburg siba | . Aftracan | 51 46 | 55 1 |
| Offend | German Ocean | 51 14 | |
| Ords | . Aftracan | 31 12 | 58 3 |
| t. Peterfbourg | . Ruffia | 59 56 | 30 2 |
| rague | . Bohemia . | 50 4 | 1200 |
| Ancient Rakah | . Mesopotamia | 36 1 | |
| Rotterdam | . Holland | 51 56 | 4 2 |
| stockholm | - Sweden | 59 21 | |
| l'oboliki . | Ruffia | 58 12 | |
| Jpfal | . Sweden | 59 52 | |
| Jraniberg . Observator | . Denmark | 55 54 | 12 5 |
| Vicana, the Imp. Observator | Germany | 48 13 | Sec. 10. |
| Attender 8 | · Germany | 3, 43 | is cont |
| 60° North, and Longitude and 180° East. | | | |
| and 180° Baft. | 90° | | |
| 60° North, and Longitude
and 180° Baft. | 90°
India | 5 ²² | 95 3 |
| 60° North, and Longitude
and 180° Baft.
Achem | • India
China | 23 7 | 113 |
| 60° North, and Longitude and 180° Baft. Achem Canton Ide Pulo Condor | 90°
India | 8 40 | 107 2 |
| 60° North, and Longitude and 180° East. Achem Canton de Pulo Condor de of Cummin | • India
China
India | 23 7
8 40
31 40
33 35 | 113
107 2
121
118 5 |
| 60° North, and Longitude and 180° East. Achem Canton Ge Pulo Condor Ge of Cummin Hoai Nghan Gamabad | India China India China China India | 23 7
8 40
31 40
33 35
22 20 | 113
107 2
121
118 5
91 4 |
| 60° North, and Longitude and 180° Baft. Achem Canton de Pulo Condor fle of Cummin Hoai Nghan flamabad juthia | India China India China China China India India India | 23 7
8 40
31 40
33 35
22 20
14 18 | 113
107 2
121
118 5
91 4
100 5 |
| 60° North, and Longitude and 180° Baft. Achem Canton the Pulo Condor the of Cummin Hoai Nghan than than Mghan than than than than than than than t | India China India China China India India India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42 | 113
107 2
121
118 5
91 4
100 5 |
| 60° North, and Longitude and 180° Baft. Achem Canton de Pulo Condor de of Cummin Hoai Nghan damabad uthia Louvean Macao | India China India China China China India India India India China | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13 | 113
107 2
121
118 5
91 4
100 5
101
113 4 |
| 60° North, and Longitude and 180° Baft. Achem Canton the Pulo Condor the of Cummin Hoai Nghan thamabad tuthia Louvean Macao Malaca | India China India China China India India India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12 | 113
107 2
121
118 5
91 4
100 5
101
113 4 |
| 60° North, and Longitude and 180° East. Achem Canton de Pulo Condor de of Cummin Hoai Nghan damabad uthia ouveau Macao Malaca Manila, Isle of Manila | India China India China China China India India India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12 | 113
107 2
121
118 5
91 4
100 5
101
113 4
102
120 2 |
| 60° North, and Longitude and 180° East. Achem Canton de Pulo Condor de of Cummin Hoai Nghan flamabad juthia ouvean Macao Malaca Manila, Isle of Manila Mergui | India China India China China China India India India India India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12
14 30 | 113
107 2
121
118 5
91 4
100 5
101
113 4
102
120 2
98 |
| 60° North, and Longitude and 180° East. Achem Canton (de Pulo Condor (de of Cummin Hoai Nghan (flamabad (uthia Louvean Macao Malaca Manila, Isle of Manila Mergui Nangafachi | India China China China China China India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12
14 30 | 113
107 2
121
118 5
91 4
100 5
101
113 4
102
120 2
98
128 4 |
| 60° North, and Longitude and 180° East. Achem Canton Ge Pulo Condor Ge of Cummin Hoai Nghan Gamabad Juthis Louvean Macao Malaca Manila, Isle of Manila Mergui Nangasachi Ningpo | India China India China China China India India India India India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12
14 30
 | 107 2
121
118 5
91 4
100 5
101
113 4
102
120 2
98
128 4
120 1 |
| 60° North, and Longitude
and 180° Baft. | India China China China China China India India India India India India China India India India | 23 7
8 40
31 40
33 35
22 20
14 18
12 42
22 13
2 12
14 30
 | 113
107 2
121
118 5
91 4
100 5
101
113 4
102
120 2
98
128 4 |

Places between Latitude oo and 60° North, and Longitude 90° and 180° East, continued.

| Names of Places. | Country or Coast. | Latit. | Long. |
|--|-------------------|---|--|
| Isle Pulo Timon Piscadores 7 South End Islands 5 North End Tinian Grafton's Island Pulo Aroe | Gulph of Siam | 11 0
11 20
14 58
21 4 | 145 50 |
| Places between Latitude oo and 60° South, and Longitude 93° and 180° West. Whitsunday Island Queen Charlotte's Island Egmont Island Duke of Gloucester's Island Duke of Cumberland's Islands Prince William Henry's Island Ofnaburgh Island K. Geo. Isl.'s Island or Otaheite Duke of York's Island Sir C. Saunders's Island Sir C. Saunders's Island Lord Howe's Island Scilly Island Boscawen's Island Augustus Keppel's Island Wallis's Island | South Seas. | 19 18
19 20
19 11
19 18
19 0
17 51
17 48
17 28
17 28
16 46
16 28
15 50 | 138 30
140 6
140 34
141 6
147 30
149 15
150 0
150 16
151 4
154 13 |
| Places between Lat. 0° and 60° South, and Lon. 0° and 90° West. Arica Isle of Ascension | | 18 27
7 28 | 71 11 |

| Names of Places. | Country or Coast. | Latit. | Long. | |
|--|--|-----------------------------|--------------|--|
| 3.5. DE J. | | 0. 1 | 0 / | |
| ape Blanco | Patagonia Brazil | 47 20 | 70 5 | |
| allao | Peru | 34 55 | 58 31 | |
| t. Catharine | Plata | 12 2 | 76 58 | |
| Conception | . Chili | 27 35 | | |
| Suzquil | Pera | 36 43 | | |
| fland St. Helena | AtlanticOcean | | | |
| ames Fort | - Benguela | 15 57 | 5 40 | |
| lio Janeiro | Brazil | | 5 49 | |
| ima | Peru | E/1923 Fr 14 | 42 4 | |
| ape Lotenzo | Peru | 942 (138) 3.20 | 76 4 | |
| Quito | Peru | 0 12 | 12 | |
| alparais | - Chili | | 77 5 | |
| lo selles et la selle dine | Peru | 33 3 | 72 19 | |
| oquimbo . | Chili | 17 36 | | |
| ort St. Julian | Patagonia | 29 54
49 10 | | |
| Dlinde | Brazil | Charles and a little of the | SAT GOVERN | |
| Cape Virgins | THE RESERVE THE PARTY OF THE PA | my 8 7 8 8 2 3 1 5 2 4 | 35 | |
| ort Defire | Patagonia South Sea | 52 26 | 66 2 | |
| Cape Virgin Mary | · South Sea | 47 56 | | |
| oint Possession | - house to be | 52 24 | | |
| Point Porpus | - Harry Conty | 52 30 | | |
| ort Famine | - I Constitution of the least o | . 53 8 | 71 30 | |
| Cape Forward . | A THE STATE OF THE PARTY OF THE | 53 43 | 71 3 | |
| Cape Holland | A STATE OF THE PARTY OF THE PAR | 54 3 | 13 | |
| Cape Gallant | | 53 58 | 1.0 | |
| Cape Quod | A STATE OF THE PARTY OF THE PAR | 53 50 | | |
| Cape Notch | - PALLE | 53 33 | | |
| Cape Upright | | 53 22 | 199 | |
| Cape Pillar (Lon. per Reck. 7 | 60) | 53 5 | | |
| apt time (Lone per Reck. / | | 52 46 | and the same | |
| | The state of the s | 270 | | |
| and the state of t | But has to real | A27471 | (F.0) 70% | |
| Places between Lat. 0° and 60 and Long. 0° and 90° East | | ig 3 bns | satters. | |
| fle of Bourbon, St. Dennis | . Madagafcar | 20 52 | . 55 3 | |
| fland Mauritius, Port Lewis | Madagafcar | 20 10 | 57 2 | |

Places between Latitude oo and 60° South, and Longitude oo and 90° East, continued.

| Names of Places. | Country or Coaft. | Latit. | Long. |
|---|-------------------|---|--|
| Rodrigues Cape of Good-Hope, Town Cape Point Cape False, or Hanglip Saldanha Bay Dassen Island Hout Bay | Madagafcar | 9 41
33 55
34 49
34 10
33 10
33 25
34 3 | 63 10
18 23
18 23
18 44
17 59
18 2
18 19 |
| Places between Latitude oo and 60° South, and Longitude 90° and 180° East. | | 4 10 | 105 14 |
| Batavia, Ifle Java | 344 | 6 12 | |

Y y z

TABLE

1

TABLE XXXIX.

Of the Variation of the Compass, observed from the Year 1766, to 1769, inclusive.

| Lat.
N. | Lon.
W. | Var.
W. | Lat.
S. | Lon.
W. | Var.
E. | Lat.
S. | Lon.
W. | Var.
W. |
|------------|------------|--|------------|------------|---|-----------------|------------|------------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 68 | 40 | 5.4 | 72 | 22 | 17 | 2 | 13 |
| 50 | 8 | 221 | 53 | 76 | 23 | 7 | 14 | 10 |
| 50 | 7 | 20 | 52 | | 23 | - | | - |
| 36 | 30 | 141 | 42 | 96 | 12 | Lat. | Lon. | Var. |
| 34 | 33 | 114 | 47 | 61 | 204 | S. | E. | W. |
| 33 | 17 | 15. | . 37 | 52 | 151 | 34 | 37 | 24. |
| 21 | 37 | 4 ¹ / ₂
8 ¹ / ₂ | 34 | 46 | 12 | 34 | 18 | 191 |
| 15 | 24 | 81 | 34 | 79 | 11 | 30 | 42 | 26 |
| 15 | 35 | 41 | 28 | 96 | 6 | 7 6 | 104 | 1 |
| Tat | 41.0 | Van | 25 | 134 | 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 120151400000.70 | 117 | 1 |
| Lat. | Lon.
E. | Var.
E. | 24 | 38 | 5 | 4 | 102 | none |
| 16 | | | 21 | 107 | 5, | Lat. | Lon. | Var. |
| 15 | 144 | 54 | 20 | 130 | 52 | S. | E. | E. |
| 11 | 146 | 10 | 19 | 138 | 51/2 | 11 | 165 | 11 |
| | .07 | | 19 | 148 | 7 6 | 8 | | 81 |
| Lat. | Lon. | Var. | 16 | 155 | 8 | 5 | 159 | 54 |
| N. | E. | W. | 16 | 175 | 9 | , | .,," | 3+ |
| 21 | 121 | 1 | 13 | 177 | 10 | 12 8 | 1 | 1 |
| 2 | 105 | 1 | 12 | 30 | none | | | 1 |

TABLE XL.

For finding the Time of High Water, on new Principles.

| Interval. | Full | Before
First
Quartr. | Laft | | To find the Time of High-
Water by this Table.
First, by Tab. XXXV. |
|-----------|---|--|---|---|--|
| Days o | Add
h ' | Add
h ' | Add
h ' | Subtr. | find the Interval of Time
the nearest Phase of the |
| 0 0 | 0 0 | 4 45 | 4 45 | 0 0 | Moon, to the Noon of the |
| 12 16 20 | 0 16 0 23 0 31 0 39 | 4 37
4 29
4 22
4 14
4 6 | 4 53
5 1
5 9
5 18
5 26
5 34 | 0 7
0 15
0 22
0 30
0 37 | given Day, is distant from
that Noon, Against this
Interval, in the proper
Column in this Table,
will be the Hours and
Minutes to be added to,
or subtracted from, the |
| 10 20 | 0 53 | 3 5 ²
3 46
3 40
3 33
3 ² 7 | 5 46
5 59
6 11
6 23
6 36 | 0 51
0 59
1 6
1 14
1 22 | Flowing of the Port, for
the estimated Time of
High-Water. Then find
the Interval of Time of
the nearest Phase from
the estimated Time; with |
| | 6 1 48 | 3 23
3 17
3 12
3 6
3 1
2 56 | 6 48
7 0
7 12
7 24
7 30
7 48 | 1 39
1 47
1 56
2 5
2 14 | which Interval take out
of this Table the Hours
and Minutes to be added
to, or subtracted from
the Flowing of the Port,
for a more correct Time |
| 3 | 0 2 0 | 2 50 | 8 0 | 2 23 | of High Water. |
| 1 1 2 | 2 6
8 2 12
2 2 18
6 2 24
0 2 30
0 2 36 | 2 44
2 39
2 32
2 26
2 21
2 16 | 8 12
8 24
8 36
8 48
9 0 | 2 34
2 45
2 55
3 6
3 17
3 28 | GI It is intended to treat
more fully on this Subject
in the Elements of Navi-
gation. |

Tide Instrument, (Price Two Shillings,) which shews readily the Time of High-Water on these Principles; also the Sun and Moon's Place for any Day, the Moon's Southing, and Time of High-Water, on common Principles, &c. — Also a Variation and Tide Instrument, (Price Two Shillings,) very useful to young Navigators, in correcting their Courses, &c. with the Method of finding the Time of High-Water, on the Principles of the Abbé de la Caille.

 $^{\circ}$



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| ridian . | 278 |
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THE END.

ERRATA.

Page 145, the Nat. Cosec. from 0° 0' to 0° 50', is placed one Line too high; it should have been printed thus.

| Nat.
Cofec. | 1 | |
|----------------|----|----|
| Infinite | 10 | 90 |
| 3437.7 | | |
| 343-77 | | |
| 171.89 | | |
| 85.946 | | |
| 68.757 | 10 | |

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